

Fordham Intellectual Property, Media and Entertainment Law Journal

Volume 7 *Volume VII*
Number 2 *Volume VII Book 2*

Article 8

1997

The European Database Directive: Regional Stepping Stone to an International Model?

G. M. Hunsucker
Phelps Dunbar L.L.P.

Follow this and additional works at: <https://ir.lawnet.fordham.edu/iplj>



Part of the [Entertainment, Arts, and Sports Law Commons](#), and the [Intellectual Property Law Commons](#)

Recommended Citation

G. M. Hunsucker, *The European Database Directive: Regional Stepping Stone to an International Model?*, 7 Fordham Intell. Prop. Media & Ent. L.J. 697 (1997).
Available at: <https://ir.lawnet.fordham.edu/iplj/vol7/iss2/8>

This Article is brought to you for free and open access by FLASH: The Fordham Law Archive of Scholarship and History. It has been accepted for inclusion in Fordham Intellectual Property, Media and Entertainment Law Journal by an authorized editor of FLASH: The Fordham Law Archive of Scholarship and History. For more information, please contact tmelnick@law.fordham.edu.

The European Database Directive: Regional Stepping Stone to an International Model?

G. M. Hunsucker^{*}

TABLE OF CONTENTS

INTRODUCTION	700
I. DATABASE PROTECTION UNDER EXISTING LEGAL REGIMES	710
A. <i>General Characteristics of the Splintered Database Markets</i>	711
B. <i>Protection Afforded Database Makers by Existing Legal Regimes</i>	714
1. Protection Afforded by Copyright	715
2. Protection Afforded by Contract	717
3. Protection Afforded by Unfair Competition Law	720
II. COMPARISON OF THE DATABASE DIRECTIVE WITH THE PROPOSALS	722

* Copyright © 1997 by G. M. Hunsucker. Attorney-at-Law, Phelps Dunbar, L.L.P., Tupelo, MS; Corporate/Executive Database Designer. Valdosta University, B.S.Ed 1992; Vanderbilt University School of Law, J.D. 1996. This Article significantly expands the analysis set forth in a previous comment, *Raising a Toll Fence to Protect the "Noncreative" Labors of Database Makers: The European Database Directive*, awarded First Prize in 1996 Nathan Burkan Memorial National Competition at Vanderbilt University School of Law, sponsored by the American Society of Composers, Authors, and Publishers. The author thanks Professor Jerome H. Reichman for his comments on earlier drafts of the comment, and for discussion of the issues raised by the *sui generis* regimes.

A. <i>Scope of Protection</i>	722
1. Database Defined	722
2. <i>Sui Generis</i> Rights Granted.....	724
a. The Extraction Right	725
b. The Complementary Reutilization, or Use and Reuse, Right	725
c. Breadth of the <i>Sui Generis</i> Rights	726
3. Rights and Obligations in Existing Databases ...	729
B. <i>Beneficiaries of Protection</i>	730
C. <i>Term of Protection</i>	731
D. <i>Exceptions: User Protections</i>	733
E. <i>The Proposals' Provisions Regarding Protection- Defeating Devices and Database Management Information</i>	734
III. MAKING THE PARADIGMATIC SHIFT: LINKING INCENTIVES TO PRODUCTION COSTS	735
A. <i>Vindicating the Competitive Ethos in Nonproprietary Data: Forcing Free Riders to Become Fair Followers</i>	740
1. The Facts of <i>ProCD v. Zeidenberg</i>	742
2. Protecting the Database Maker's Investment From Free Riders and Information Samaritans .	743
3. Protecting the Public's Interest in Competition.	746
B. <i>Criticisms of the Database Directive Regarding Sole- Source Data: Is the Sky Falling?</i>	749
C. <i>The Ameliorative Measures: Will They Protect the Public's Interest in Competition?</i>	752
1. The Swords: The European Economic Community Treaty and Competition Law	752
2. Mandatory and Optional Shields to Protect the User.....	755
a. The Mandatory Shields.....	756
b. The Optional "Fair Use" Shields	758

D. <i>Effects within the European Community</i>	761
IV. THE DATABASE DIRECTIVE: STEPPING STONE TO AN INTERNATIONAL MODEL	763
A. <i>Enabling Competition in a Commercialized Information Market</i>	763
1. Mandating Licenses in the Case of Sole-Source Data	764
2. Compulsory Licenses Should Serve the Interests of the Database Maker and the Public	764
3. Prohibiting Exclusive Licensing Arrangements	766
B. <i>Potential Effects on Basic Research and Development</i>	767
1. Concerns Expressed by Those Conducting Basic Research	769
2. Potential Benefits to Those Conducting Basic Research	771
a. Market Participation	771
b. An International Treaty Addressing Publicly-Funded Data	773
c. Reducing Inefficiencies Masked by Hidden Subsidies	774
d. Not a Threat to Technological Innovation	775
C. <i>Potential Benefits to Society</i>	775
CONCLUSION	777

INTRODUCTION

Electronic databases¹ provide information users with extraction tools enabling them to sort and arrange data in ways meaningful to them; extending the manipulative abilities of information users' minds adds immense value to what would otherwise be a mass of incoherent, disparate data.²

1. The European Database Directive defines a database as "a collection of works, data or other independent materials arranged in a systematic or methodical way and capable of being accessed by electronic or other means." Council Directive No. 96/9, art. 1(1), O.J. L 77/20, at 24 (1996) [hereinafter Database Directive]. The Database Investment and Intellectual Property Antipiracy Act of 1996 ("U.S. Proposal") defines a database as "a collection, assembly or compilation, in any form or medium now or later known or developed, of works, data or other materials, arranged in a systematic or methodical way." H.R. REP. NO. 3531, 104th Cong., 2d Sess. § 2 (1996). The Draft Treaty on Intellectual Property in Respect of Databases defines a database as "a collection of independent works, data or other materials arranged in a systematic or methodical way and capable of being accessed by electronic or other means." *Diplomatic Conference on Certain Copyright and Neighboring Rights Questions, Draft Treaty on Intellectual Property in Respect of Databases*, art. 2(1) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996) [hereinafter *WIPO Proposal*]. Using the right collection tool, almost anything, including numbers, text, audio, and images, can be reduced to binary form which can then be compiled in a database. However, the U.S. and WIPO Proposal ("Proposals") exclude computer programs from their protection, and the Database Directive excludes "computer programs used in the making or operation of databases accessible by electronic means" from its protection. See H.R. REP. NO. 3531, *supra*, § 3(d); *WIPO Proposal, supra*, art. 1(4) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996); Database Directive, *supra*, art. 1(3), O.J. L 77/20, at 24 (1996). In addition, the Database Directive and WIPO Proposal exclude certain dependent works. See Database Directive, *supra*, recital 17, O.J. L 77/20, at 21 (1996); *WIPO Proposal, supra*, Notes § 2.03 WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

2. The value of the global information industry could reach \$3 trillion dollars by the early 21st Century. *Statement on Dismantling the U.S. Department of Commerce: Testimony Before the Subcomm. on Government Management, Information and Technology of the House Comm. on Government Reform and Oversight*, 104th Cong., 1st Sess. (1995) (statement of Ronald H. Brown, Secretary of Commerce). Note, however, that the "global information industry" referred to by the late Secretary Brown is much broader than the database market alone. A recent statement of the Co-Chair on High Performance Computing and Communications valued the "information technology" sector at \$500 billion. *Prepared Statement on Evolving the High Performance Computing and Communications Initiative to Support the Nation's Information Infrastructure: Testimony Before the Science Subcomm. on Basic Research High Performance Computing and Communications Program of the House Committee on High Performance Computing and Communications*, 104th Cong., 1st Sess. (1995) (prepared statement of Ivan E. Sutherland, Ph.D., Co-Chair,

Yet, in most of the world, these valuable business tools³ stand virtually naked in the marketplace,⁴ vulnerable to

Committee on High Performance Computing and Communications, and Vice-President, Sun Microsystems). When the European Community ("EC") penned its Initial Proposal for the legal protection of databases in 1992, the EC database market was estimated at \$10.2 billion, which amounted to approximately 30% of the world market. W. Joseph Melnik, *A Comparative Analysis for the Legal Protection of Computerized Databases: NAFTA vs. The European Communities*, 26 CASE W. RES. J. INT'L L. 57, 59 n.14 (1994).

3. See *supra* note 2 (discussing the dollar value of the information technology market); J. H. Reichman, *Electronic Information Tools: The Outer Edge of World Intellectual Property Law*, 17 DAYTON L. REV. 797, 806 n.45 (1992); Database Directive, *supra* note 1, recital 9, O.J. L 77/20, at 20 (1996) ("databases are a vital tool in the development of an information market within the Community"); *WIPO Proposal*, *supra* note 1, Preamble WIPO Doc. CRNR/DC/6 (Aug. 30, 1996) ("databases are . . . an essential tool for promoting economic, cultural, and technological advancement"); see also 142 CONG. REC. E890-04 (daily ed. May 23, 1996) (statement of Sen. Moorhead) ("[D]atabases are an essential tool for improving productivity, advancing education and training, . . . creating a more informed citizenry[, and] . . . are also the linchpin of a dynamic commercial industry in the United States.").

4. Databases, like most forms of intellectual property, are saddled with "public goods" characteristics: they are indivisible, inexhaustible, and ubiquitous. See, e.g., J. H. Reichman, *Charting the Collapse of the Patent-Copyright Dichotomy: Premises for a Restructured International Intellectual Property System*, 13 CARDOZO ARTS & ENT. L.J. 475, 486 (1995); see also J. H. Reichman & Pamela Samuelson, *Intellectual Property Rights in Data?*, 50 VAND. L. REV. 51, 59 n.35 (1997); see *infra* notes 5, 8-10 and accompanying text (discussing vulnerability of databases). Practically speaking, this means that without some legal protection, parasitic competitors can access, copy, rearrange, and market a competing database at a fraction of the cost incurred by the original database maker. COMM. ON ISSUES IN THE TRANSBORDER FLOW OF SCIENTIFIC DATA, U.S. NAT'L COMM. FOR CODATA, COMM'N ON PHYSICAL SCIENCES, MATHEMATICS, AND APPLICATIONS, AND NAT'L RESEARCH COUNCIL, *BITS OF POWER: ISSUES IN GLOBAL ACCESS TO SCIENTIFIC DATA* 1-52 (National Academy Press forthcoming 1997) [hereinafter *GLOBAL ACCESS*]. Although database makers can erect technological fences to protect their investments (e.g., encryption algorithms), those fences suffer limitations which render them less than optimal as a means of protection. See, e.g., Henry H. Perritt, Jr., *Property and Innovation in the Global Information Infrastructure*, 1996 U. CHI. LEGAL F. 261, 288 (1996) (discussing market, technological, and legal limitations as tools to protect intellectual property on the Internet). In addition, useable encryption technology forces only the first purchaser to pay for a key to decrypt the encoded information. Therefore, unless there is a fence, or other disincentive to prevent the first purchaser from repackaging the database maker's investment, encryption suffers the same weakness as the two-party deal discussed *infra* in Part I.

parasitic competitors, users, and information Samaritans,⁵ unless the database maker renders the database less valuable, or more expensive,⁶ to the information user by creatively “selecting and arranging” enough disparate data to erect the fence⁷ afforded by copyright,⁸ erects the two-party

5. Information Samaritans refers to parties who, for noneconomic reasons, extract data from databases without paying the database maker and make it freely available to the public. Cf. *United States v. LaMacchia*, 871 F. Supp. 535, 536 (D. Mass. 1994). In *LaMacchia*, a federal grand jury indicted LaMacchia, a 21-year-old M.I.T. student, for devising a scheme in violation of 18 U.S.C.A. § 1343 (West Supp. 1996), the wire fraud statute, to defraud software manufacturers and vendors. *Id.* LaMacchia encouraged users to upload popular software and games to an electronic bulletin he named Cynosure, and transferred the programs to a second location where users with access to the Cynosure password could freely download the programs. *Id.* Because LaMacchia had apparently not acted for the purposes of securing “commercial advantage or private financial gain,” he could not be prosecuted under the criminal copyright statute, 17 U.S.C.A. § 506 (West Supp. 1996). *Id.* at 545; see also Copyright Law of the United States of America, Pub. L. No. 94-553, 90 Stat. 2541 (1976) (current version at 17 U.S.C.A. §§ 101-810 (West Supp. 1996)). Citing, among other factors, the failure to allege violation of the criminal copyright statute, *id.* at 542-43, and relying heavily on the reasoning of *Dowling v. United States*, 473 U.S. 207 (1985), the district court granted LaMacchia’s motion to dismiss, but nonetheless noted that if the indictment was true, LaMacchia’s behavior was “at best heedlessly irresponsible, and at worst . . . nihilistic, self-indulgent, and lacking in any fundamental sense of values.” *LaMacchia*, 871 F. Supp. at 545. This Article does not discuss the conflicting policies presented by criminal prosecution of information Samaritans. See Teddy C. Kim, *Taming the Electronic Frontier: Software Copyright Protection in the Wake of United States v. LaMacchia*, 80 MINN. L. REV. 1255 (1996) (arguing that criminal prosecution of noncommercial copyright infringers is inappropriate). However, this Article does proceed on the assumption that extracting data from databases and making it freely available, regardless of the motive for such behavior, destroys incentives to invest in database creation. See GLOBAL ACCESS, *supra* note 4, at 8.

6. For example, to secure copyright protection, many database makers inject “value-added” data, which increases the price of the database to the information user without any corresponding increase in utility. See Jane C. Ginsburg, *No “Sweat”? Copyright & Other Protection Works of Information*, 92 COLUM. L. REV. 338, 344-47 (1992). The additional data adds “value” only in the sense that it enables the database maker to secure some degree of copyright protection. *Id.* at 347.

7. Cf. Wendy J. Gordon, *Asymmetric Market Failure and Prisoner’s Dilemma in Intellectual Property*, 17 U. DAYTON L. REV. 853, 855 (1992) (noting that the right to exclude afforded authors functions much in the same way as fences do for real property owners).

8. Copyright generally protects only the creative selection and arrangement of factual information. See Berne Convention for the Protection of Literary and

wall afforded by contract,⁹ or is otherwise able to secure the haphazard protection whimsically afforded by unfair competition law.¹⁰

Artistic Works of September 9, 1886, completed at Paris on May 4, 1896, revised at Berlin on Nov. 13, 1908, completed at Berne on Mar. 20, 1914, revised at Rome on June 2, 1928, revised at Brussels on June 26, 1948, and revised at Stockholm on July 14, 1967 (with Protocol regarding developing countries), completed at Stockholm on July 14, 1967, art. 2(5), 828 U.N.T.S. 221 [hereinafter Berne Convention] (protecting collections of works, which by reason of selection and arrangement of their contents, constitute intellectual creations); 17 U.S.C.A. §§ 101, 103 (West Supp. 1996) (protecting compilations of data that are selected, coordinated, or arranged in such a way that the compilation constitutes an original work of authorship). With regard to copyright protection, the Database Directive is in accord. See Database Directive, *supra* note 1, recitals 15-16, O.J. L 77/20, at 21, art. 3(1), O.J. L 77/20, at 25 (1996) (databases, which by reason of selection or arrangement of their contents constitute intellectual creations, shall be protected by copyright); Diplomatic Conference on Certain Copyright and Neighboring Rights Questions, Draft Treaty on New Copyright Developments, art. 5 WIPO Doc. CRNR/DC/89 (Dec. 20, 1996) (compilations of data, which by reason of selection or arrangement of their contents, constitute intellectual creations are protected), *adopted by* Diplomatic Conference on Certain Copyright and Neighboring Rights Questions, Geneva, Dec. 20, 1996; see also J. H. Reichman, *Universal Minimum Standards of Intellectual Property Under the TRIPs Component of the WTO Agreement*, 29 INT'L LAW. 345, 373 (1995) (noting that the Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS") fails to offer the protection provided by the Database Directive's *sui generis* regime). But see Copyright, Designs and Patents Act, 1988, 2 Eliz. 2, ch. 48, §§ 2-3 (Eng.) (protecting "sweat of the brow" databases in the United Kingdom); Reichman, *supra* note 3, at 804 n.33 (citing W. R. CORNISH, *INTELLECTUAL PROPERTY: PATENTS, COPYRIGHT, TRADEMARKS AND ALLIED RIGHTS* 268-69 (2d ed. 1989) for the United Kingdom's practice of extending copyright to small change literary productions provided they exhibit "skill, judgment, and labor"); see also Ginsburg, *supra* note 6, at 372 n.161 (noting that the Nordic Catalogue Rule provides protection to unoriginal compilations for 10 years). The Database Directive permits derogation from its terms so that databases protected under less-exacting EC copyright regimes on the Database Directive's effective date will continue to enjoy that protection until their term expires. Database Directive, *supra* note 1, art. 14(2), O.J. L 77/20, at 27 (1996); cf. WIPO Proposal, *supra* note 1, art. 7(3) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996) (rights granted by treaty are independent of any protection afforded to the database maker by national legislation). Similarly, the *sui generis* rights granted by the three regimes are without prejudice to any other rights. See Database Directive, *supra* note 1, art. 13, O.J. L 77/20, at 27 (1996); H.R. REP. NO. 3531, *supra* note 1, § 9 (c); WIPO Proposal, *supra* note 1, art. 10(2) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

9. See generally JOHN D. CALAMARI & JOSEPH M. PERILLO, *CONTRACTS* 4, 9 (3d ed. 1987).

10. J. H. Reichman, *Legal Hybrids Between the Patent and Copyright Paradigms*,

Recognizing the need for a “stable and uniform legal protection regime” to stimulate database creation in the European Community (“EC”),¹¹ the EC struck out boldly by erecting a toll fence¹² to protect the investment of database

94 COLUM. L. REV. 2432, 2476 (1994) (noting that the development of unfair competition proceeds on a “hit-or-miss basis that varies with the outlook of single judges . . . [without any] well-defined objects of protection, . . . standards of eligibility, and [with] few safeguards to protect the interests of all concerned”).

11. Database Directive, *supra* note 1, recital 12, O.J. L 77/20, at 20 (1996). The United States’ share of the database market is approximately twice the EC’s market share. See Explanatory Statement at COM(92)24 final-SYN 393 accompanying the Council Directive Initial Proposal, art. 8, O.J. C 156/03, at 9 (1992) [hereinafter Initial Proposal]; see also Debra B. Rosler, *The European Union’s Proposed Directive for the Legal Protection of Databases: A New Threat to the Free Flow of Information*, 10 HIGH TECH. L.J. 105, 109-10 (1995) (explaining that Great Britain garners approximately 65% of the revenues from the EC database market). Is it merely a coincidence that the two countries with the biggest database market share, the United States and Great Britain, have historically protected “noncreative” labors of database makers through “sweat of the brow” and “industrious collection” rationales? See Pamela Samuelson, *Missing Foundations of The Proposed European Database Directive* (1994) (on file with Professor Jerome H. Reichman, Vanderbilt University School of Law). For a comparison of the two rationales, compare Jane C. Ginsburg, *Creation and Commercial Value: Copyright Protection for Works of Information*, 90 COLUM. L. REV. 1865 (1990) (discussing United States “sweat of the brow” rationale) with Colin Tapper, *An Aspect of Copyright in Data Bases*, 14 N. KY. L. REV. 169 (1987) (explaining Great Britain’s “industrious collection” rationale). But see Mark Powell, *The European Union’s Database Directive: An International Antidote to the Side-Effects of Feist?*, in 3 FORDHAM INTERNATIONAL INTELLECTUAL PROPERTY LAW & POLICY (Hugh C. Hansen ed., forthcoming 1997) (citing the European Parliament’s Committee on Economic and Monetary Affairs opinion that “the economic situation in the database sector is such that urgent actions are not as yet required”).

12. Cf. Gordon, *supra* note 7, at 855. Gordon argues that groups seeking new fences “should be prepared to show that their current fences are inadequate to provide adequate incentives.” *Id.* To justify their need for a new fence, database makers need only point to *Feist Publications, Inc. v. Rural Telephone Service Co.*, 499 U.S. 340 (1991), and its implications. See Ginsburg, *supra* note 6, at 343 (“*Feist* . . . calls into question the ability of copyright . . . to secure meaningful coverage to those compilations that do meet the initial test of copyrightability.”). In *Feist*, the United States Supreme Court cloaked free riders who appropriate the “noncreative” labors of data collectors with constitutional protection by endorsing the thin copyright doctrine. *Feist*, 499 U.S. at 357-59. Apparently, only the creative selection and arrangement of facts deserve copyright protection. Unfortunately, for many database makers, the exercise of creativity in the selection and arrangement of data is constrained by societal expectations, notions of functionality, and “user-friendliness” considerations. See Ginsburg, *supra* note 6, at 343; Robert C. Denicola, *Copyright in Collections of Facts: A Theory for the Protec-*

makers.¹³ Emboldened by, or perhaps scurrying to catch up with,¹⁴ the vanguard approach¹⁵ embodied in the EC's Database Directive,¹⁶ the United States and the World Intellectual Property Organization ("WIPO") have proposed similar protection for these valuable business tools.¹⁷ Like the Database Directive, the United States and WIPO proposals ("Proposals"), respectively known as the Database Investment and Intellectual Property and Antipiracy Act of 1996 ("H.R. 3531" or "U.S. Proposal")¹⁸ and the Draft Treaty on Intellectual

tion of Nonfiction Literary Works, 81 COLO. L. REV. 516, 527-30 (1981).

13. The Database Directive extends copyright protection to "authors" of databases, Database Directive, *supra* note 1, arts. 3-5, O.J. L 77/20, at 25 (1996), but extends *sui generis* protection to a broader group: database makers. *Id.* art. 7(1), O.J. L 77/20, at 25 (1996). The Database Directive defines database makers as those who take the "initiative and risk of investing." *Id.* recital 41, O.J. L 77/20, at 23 (1996). Unlike the Database Directive, which leaves ownership of employee-made databases up to national legislation, *see id.* recital 29, O.J. L 77/20, at 22 (1996), both the U.S. and WIPO Proposals define database maker in such a way as to preclude employees and subcontractors from gaining ownership rights. *See* H.R. REP. NO. 3531, *supra* note 1, § 2; *WIPO Proposal*, *supra* note 1, art. 2(3) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996) (database maker is the person with control and responsibility for the undertaking of a substantial investment). This Article does not address the copyright protection afforded database makers by the Database Directive. *Id.* art. 7(1), O.J. L 77/20, at 25 (1996).

14. *See* Paul Waterschoot, *An Overview of Recent Developments in Intellectual Property in the European Union*, in 3 FORDHAM INTERNATIONAL INTELLECTUAL PROPERTY LAW & POLICY, *supra* note 11 (explaining that the Database Directive "has placed the Community far ahead of its partners"); 142 CONG. REC. E890-04 (daily ed. May 23, 1996) (statement of Sen. Moorhead) (explaining that the "Directive could place U.S. firms at an enormous competitive disadvantage throughout the entire European market").

15. *See* Powell, *supra* note 11, at 50 n.2 (noting that the EC's "vanguard approach to the legal protection of databases" parallels the United States' adoption of a *sui generis* regime, the Semiconductor Chip Protection Act of 1984, Pub. L. No. 98-620, 98 Stat. 3347 (1984) (codified as amended at § 17 U.S.C.A. §§ 901-914 (West Supp. 1996)), to protect semiconductors).

16. Council Directive No. 96/9, O.J. L 77/20 (1996). The Database Directive can be logically divided into three sections: Articles 3-6 govern the copyrightability of databases; Articles 7-11 govern the *sui generis* extraction and reutilization rights; and Articles 1, 2, and 12-16 are common provisions applicable to both bundles of rights. *See generally* Council Directive No. 96/9, O.J. L 77/20 (1996). This Article does not address the copyright provisions of the Database Directive.

17. *See supra* note 1-2.

18. H.R. REP. NO. 3531, 104th Cong., 2d Sess. (1996).

Property in Respect of Databases (“WIPO Proposal”),¹⁹ would create *sui generis* regimes²⁰ protecting investment, as such, in databases.

Some commentators argue that the Database Directive, and the Proposals it has spawned, are arguably the “most deviant” examples of the trend toward *sui generis* protection for intellectual property falling between the cracks of the mature paradigms of patent and copyright.²¹ These commentators also argue that the Database Directive is “one of the least balanced and most potentially anti-competitive intellectual property [regimes] ever created,”²² and join others who argue that the Database Directive will stifle access to information, retard competition in the database industry, and impede basic scientific research.²³

This Article argues that the Database Directive’s *sui generis* regime, at least with respect to publicly or privately-

19. Diplomatic Conference on Certain Copyright and Neighboring Rights Questions, Draft Treaty on Intellectual Property in Respect of Databases, WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

20. Intellectual property laws protecting subject matter outside the scope of the mature intellectual property paradigms of patent and copyright law are commonly deemed “*sui generis*.” See Reichman & Samuelson, *supra* note 4, at 6 n.6 (citations omitted). *Sui generis* literally means “of its own class.” See BLACK’S LAW DICTIONARY 1434 (6th ed. 1990).

21. See Reichman & Samuelson, *supra* note 4, at 53-54; see generally Reichman, *supra* note 10, at 2453-99 (discussing legal regimes protecting intellectual property falling between the cracks of the mature patent and copyright paradigms); Reichman, *supra* note 4, at 517 (suggesting the need for a new intellectual property paradigm, not based upon exclusive property rights, that “looks beyond art and inventions . . . [and] deal[s] directly with the pervasive threat of market failure facing investors in unpatentable, noncopyrightable innovation”).

22. Reichman & Samuelson, *supra* note 4, at 79.

23. See Rosler, *supra* note 11, at 146; Charles Von Simson, *Feist or Famine: American Database Copyright as an Economic Model for the European Union*, 20 BROOK. J. INT’L L. 729, 766-68 (1995); Letter from Bruce Alberts et al., President, National Academy of Sciences, to Michael Kantor, Secretary of Commerce (Oct. 9, 1996) (on file with author) [hereinafter “Academy Letter”]; Reichman & Samuelson, *supra* note 4, at 55; GLOBAL ACCESS, *supra* note 4, at 35. “Basic research” seeks to further scientific knowledge for its own sake, without regard to specific applications. See NATIONAL SCIENCE BOARD, SCIENCE & ENGINEERING INDICATORS 4-9 (15th ed. 1996).

available data (“nonproprietary data”),²⁴ serves some of the same procompetitive functions as does the law of trade secrets²⁵ without requiring secrecy.²⁶ While this Article recognizes that the Database Directive’s *sui generis* regime could result in *de facto* “fact monopolies,” or otherwise enable database makers to charge monopoly rents for sole-source or proprietary data,²⁷ this Article argues that ameliorative measures available in the EC are sufficient to enable competition, the ultimate guardian of consumers in market economies,²⁸ to perform its protective role in the EC, even in the case of sole-source data. However, the lack of an international competition law or other international sword,²⁹ which

24. Nonproprietary data are data that can be independently generated, collected, or obtained from more than one source. Compare Initial Proposal, *supra* note 11, art. 8, O.J. C 156/03, at 9 (1992) with Council Directive Amended Proposal, art. 11, O.J. C 308/01, at 13-14 (1993) [hereinafter Amended Proposal] (defining “sole-source data” as data that cannot be “independently created, collected or obtained from any other source”).

25. See *ProCD v. Zeidenberg*, 86 F.3d 1447, 1454-55 (7th Cir. 1996) (citing *Rockwell Graphic Sys. v. DEV Indus.*, 925 F.2d 174, 180 (7th Cir. 1991)); cf. Reichman, *supra* note 10, at 2439-40.

26. Under the Database Directive, second comers seeking to extract data from a protected database must either obtain a license from the database maker to extract the data, or independently generate the data. See *infra* notes 244-54 and accompanying text; cf. Reichman, *supra* note 10, at 2438-40 (noting that trade secret laws force second comers to license unpatentable know-how or to obtain the know-how by proper means); *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 490 (1974) (noting that trade secret law does not forbid independent creation, reverse engineering, or other fair and honest means).

27. See *supra* note 24 (defining “nonproprietary data”).

28. As the Supreme Court has explained: “Basic to the faith that a free economy best promotes the public wealth is that goods must stand the cold test of competition; that the public, acting through the market’s impersonal judgment, shall allocate the Nation’s resources and thus direct the course its economic development will take” *Jefferson Parrish Hosp. v. Hyde*, 466 U.S. 2, 12 (1984) (quoting *Time-Picayune Publishing Co. v. United States*, 345 U.S. 594, 605 (1953)); see also *Digital Equip. v. Uniq Digital Technologies*, 73 F.3d 756, 762 (7th Cir. 1996) (“Competition among manufacturers fully protects buyers who accurately calculate life-cycle costs.”); cf. *Rockwell Graphic Sys.*, 925 F.2d. at 180 (discussing importance of trade secrets to preserve competition in intellectual property); *Zeidenberg*, 86 F.3d at 1453 (“Competition among vendors . . . is how consumers are protected in a market economy.”).

29. See Eleanor M. Fox, *Trade, Competition, and Intellectual Property—TRIPS*

would enable fair followers³⁰ to compete directly, or indirectly with sole-source database makers in value-added markets, suggests a need to build a limitation into any international *sui generis* regime protecting investment in databases.³¹

This Article discusses and analyzes the EC Database Directive's *sui generis* regime,³² which, unlike copyright law, casts its protection based upon economic principles, rather than broad cultural policies.³³ Part I examines briefly the general characteristics of the database markets and the protection afforded databases by existing legal regimes. Part II compares the substantive provisions of the Database Directive and the Proposals. Part III analyzes the Database Directive's *sui generis* regime, using the factual background of *ProCD, Inc. v. Zeidenberg*,³⁴ a case whose facts demonstrate the vulnerability of databases to parasitic behavior, and concludes that the Directive adequately balances the public's need for information access with the need for production incentives within the EC.

and its Antitrust Counterparts, 29 VAND. J. TRANSNAT'L L. 481, 485-91 (1996) (discussing the significant differences in the world's two prominent competition law systems: European community competition law and United States antitrust law). For an analysis of the interaction between EC competition law and intellectual property law, see Jan Corbet, *The Law of the EEC and Intellectual Property*, 13 J.L. & COM. 327 (1994).

30. Cf. J. R. Reichman, *From Free Riders to Fair Followers: Global Competition Under the TRIPS Agreement*, N.Y.U. J. INT'L L. & POL. (forthcoming 1997).

31. See *infra* note 35 and accompanying text.

32. See *supra* notes 1, 16.

33. See, e.g., *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984) (explaining that copyright law makes economic reward secondary to the higher public purpose of providing the public access to the author's creative genius) (citations omitted); see also Reichman, *supra* note 10, at 2452-53 (noting that copyright promotes cultural policies at the expense of efficient allocation of resources); see also Pamela Samuelson, *Comments on Gerald Dworkin's Article on Copyright, Patent or Protection for Computer Programs*, in 1 FORDHAM INTERNATIONAL INTELLECTUAL PROPERTY LAW & POLICY 183 (Hugh C. Hansen ed., 1996) (noting that the Database Directive is based upon "competition policy, rather than on the . . . Romantic concepts of authorship embedded in . . . Continental European [copyright]").

34. 908 F. Supp. 640 (W.D. Wis. 1996), *rev'd*, 86 F.3d 1447 (7th Cir. 1996).

Part IV argues that the Database Directive's *sui generis* regime would, if modified by incorporating a compulsory license³⁵ loosely modeled on the compulsory license United States copyright mandates for musical works,³⁶ provide a sufficiently pro-competitive international model to protect the public's interest in competition in the information market. So modified, the Database Directive's *sui generis* regime would permit fair followers to follow by honest means, while protecting the "sweat of the brow" intellectual efforts³⁷ and investments of database makers. Part IV then discusses the risks and opportunities to researchers who currently operate in noncompetitive, information-subsidized environments. Finally, this Article concludes by suggesting that a *sui generis* regime protecting investment in databases could

35. See Initial Proposal, *supra* note 11, art. 8, O.J. C 156/03, at 9 (1992); Amended Proposal, *supra* note 24, art. 11, O.J. C 308/01, at 13-14 (1993) (mandating compulsory licenses on "fair and nondiscriminatory terms" in the case of sole-source data); *cf.* Reichman, *supra* note 10, at 2539-44 (proposing off-the-rack liability regime with built-in compulsory license); *see also* Pamela Samuelson et al., *A Manifesto Concerning the Legal Protection Of Computer Programs*, 94 COLUM. L. REV. 2308 (1994); *cf.* Reichman & Samuelson, *supra* note 4, at 81 (proposing short period of pro-competitive lead-time followed by an automatic license).

36. See 17 U.S.C.A. § 115.

37. Notwithstanding *Feist*'s epistemologically erroneous incantation that facts merely exist and await discovery, and therefore cannot be original, *Feist*, 499 U.S. at 347-48, the author's contributions are no more original than the researcher's contributions: both translate and recombine data from the public domain. See Jessica Litman, *The Public Domain*, 39 EMORY L.J. 965, 1016 (1990) (arguing that facts do not exist until researchers "sift through available evidence, design new avenues of inquiry, choose among a myriad of conflicting indicia, and supply interpretive paradigms"); *see also* Wendy J. Gordon, *Reality as Artifact: From Feist to Fair Use*, 55 LAW & CONTEMP. PROBS. 93 (1992); *cf.* Zechariah Chafee, Jr., *Reflections on the Law of Copyright*, 45 COLUM. L. REV. 503, 511 (1945) (explaining that authors stand on the shoulders of the cultural giant). The analytical soundness of this conceptual truism is demonstrated by the narrow scope afforded *Feist*. See, e.g., *CCC Info. Servs., Inc. v. Maclean Hunter Mkt. Reports, Inc.*, 44 F.3d 61, 67 (2d Cir. 1994) (holding that the selection and arrangement of used car valuations was creative), *cert. denied*, 116 S. Ct. 72 (1995); *Key Publications v. Chinatown Today Publishing Enters.*, 945 F.2d 509 (2d Cir. 1991) (holding that the selection of businesses to be included in a telephone directory was creative); *Kregos v. Associated Press*, 937 F.2d 700 (2d Cir. 1991) (holding that the selection of categories in creating a baseball pitching form was creative).

effect a subtle, and perhaps favorable, shift in societal resources from the pursuit of entertainment to the pursuit of knowledge.

I. DATABASE PROTECTION UNDER EXISTING LEGAL REGIMES

Although most databases find some degree of protection under the veil of copyright law, between the two-party wall afforded by contract, or within the whimsical embrace of unfair competition law, many commentators agree that these legal regimes, both singularly and collectively, fail to provide protection adequate to ensure the certainty of return on investment required to enhance and stimulate worldwide production of databases.³⁸ To reveal the gap-filling func-

38. See, e.g., *Statement on the NII Copyright Protection Act of 1995: Hearings Before the Subcomm. on Courts and Intellectual Property House Comm. on the Judiciary*, 105th Cong., 2d Sess. (1997) (statement of Barbara A. Munder, Senior Vice President, McGraw-Hill Companies, testifying on behalf of the Information Industry Association "IIA") ("Information is literally and figuratively at the heart of the National Information Infrastructure. . . ."); *id.* ("[W]ithout effective protection, [producers of information content] cannot risk . . . investment in cyberspace where it is so easy to copy, retransmit and alter our property without our permission, and often without our knowledge."). The Information Industry Association is a trade association of 550 companies that provides information products and services on a worldwide basis. See Bradford L. Smith, *Creating the Global Information Society: Looking Ahead*, in 2 FORDHAM INTERNATIONAL INTELLECTUAL PROPERTY LAW & POLICY (Hugh C. Hansen ed., forthcoming 1997); Reichman & Samuelson, *supra* note 4, at 7; Denicola, *supra* note 12, at 528-30; Ginsburg, *supra* note 6, at 340-42; Dennis S. Karjala, *Copyright in Electronic Maps*, 35 JURIMETRICS J. 395, 396 (1995) (arguing that a new approach, which may require either amending the Copyright Act or adopting a *sui generis* database protection statute, is needed to protect electronic maps); see also Database Directive, *supra* note 1, recital 12, O.J. L 77/20, at 20 (1996); WIPO Proposal, *supra* note 1, Note 1.05 WIPO Doc. CRNR/DC/6 (Aug. 30, 1996) ("[C]ontinued investment . . . in the development and refinement of databases . . . will not take place unless a stable and uniform regime of legal protection is established . . ."); cf. 142 CONG. REC. E890-04 (daily ed. May 23, 1996) (statement of Sen. Moorhead) (introducing H.R. 3531 to "encourage continued investment in the production and distribution of valuable new databases"); cf. Rosler, *supra* note 11, at 107 (the inherent vulnerability of electronic databases amplifies the need for economic protection while preserving the "free flow of information"); Dennis S. Karjala, *Misappropriation as a Third Intellectual Property Paradigm*, 94 COLUM. L. REV. 2594, 2595 (1994) [hereinafter Karjala II] (suggesting a new approach to prohibit methods of acquiring information

tions that could be served by a *sui generis* regime designed to protect the investments of database makers, this part briefly examines various “database markets.” This part then explores the relative strengths and weaknesses of existing legal regimes that afford some protection to these valuable business tools.

A. General Characteristics of the Splintered Database Markets

Databases, and their respective commercial markets, vary as much as the needs and capabilities of the information consumers patronizing the database market.³⁹ Although the commercial “database market” is difficult to define, the competitive battle for the information user’s patronage appears to be waged in at least three somewhat distinct, but overlapping, markets: the “one-stop-shopping” market; the “problem-focused” market; and the “industry-focused” market.⁴⁰

which, if permitted, would result in disincentives to create desirable works). The failure of existing legal regimes to adequately protect database makers can be partially attributed to the peculiar characteristics of information: “a commodity . . . particularly embarrassing for the achievement of optimal allocation.” See W. KIP VISCUSI ET AL., *ECONOMICS OF REGULATION AND ANTITRUST* 831-32 (2d ed. 1995) (quoting Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources to Invention*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY* 609, 620 (National Bureau of Economic Research ed., 1962)). That is, optimal information utilization occurs when information is free, while optimal information production occurs only when producers expect to appropriate the economic value of their investments. *Id.*

39. Databases range in size and complexity from the Internet, which is conceptually a database, to the Medicare and Medicaid Guide (CCH), a compilation of general and specific information relating to health care law, available in paper and electronic form, to simple tables of information.

40. Lloyd A. Fletcher, *Searcher*, INFO. TODAY, Sept. 1, 1995, available in Westlaw, Allnewsplus File; Telephone Interview with Anne Griffith, Senior Research Analyst at the Software Publishers Association, Washington, D.C. (Nov. 8, 1996) [hereinafter “Griffith Interview”] (explaining that the database market consists of many niche markets). Examples of databases serving the broader market include NEXIS (current and archived news and information) and ProQuest Direct (journals, newspapers, and dissertation abstracts). FRED NEVIN, *BUSINESS INFORMATION MARKETS 1999: THE STRATEGIC OUTLOOK* 67-77 (Lorraine Sileo et al. eds., 1996 COWLES/SIMBA INFORMATION). Business databases generally fall in seven topical areas (listed in descending market share order): financial (real-

Database vendors in the “one-stop-shopping” market offer general information content to a broad customer base.⁴¹ In contrast, database vendors in the “problem-focused” market offer specific information content, focused on particular problems, to industry-wide groups,⁴² while database vendors in the “industry-focused” market offer both general and specific information content to specific industry and professional markets such as medical, legal, government, public relations, and news.⁴³

Generally speaking, database vendors offering general information content serve a broad market and incur lower data collection costs, which permits those database vendors to charge lower fees while remaining competitive.⁴⁴ Conversely, because database vendors offering highly specialized information content generally serve a narrower market and incur higher data collection costs, those database makers typically charge higher fees to earn a return on their investment.⁴⁵ As a result, information users seeking specialized in-

time and historical), marketing, credit, research, market-specific, legal/tax/public records, and general and business news. *Id.*

41. See Fletcher, *supra* note 40 (noting that even within the broader market each vendor has its own relative subject matter strengths).

42. *Id.* (citing LEXIS/NEXIS and Knight-Ridder’s Business-Base as examples); see also NEVIN, *supra* note 40, at 72 (listing Telerate as a provider of a database focusing on the price of government securities and bonds).

43. Fletcher, *supra* note 40 (citing LEXIS/NEXIS’ AnswerPaks and KRI’s Science-Base as examples); see also NEVIN, *supra* note 40, at 75-76 (listing Equifax Insurance Information Services (insurance industry), T/SF Communications (trucking industry), and ARI Network Services (agriculture and environmental) as providers of market-specific databases).

44. Griffith Interview, *supra* note 40; see also Perritt, *supra* note 4, at 288.

45. Griffith Interview, *supra* note 40 (noting other factors driving costs in specialized markets such as increased collection costs because data are not as widely available, and higher data maintenance costs associated with dynamic data). According to one commentator, the cost of originating intellectual property can be expressed as:

$co = cc + cc + cm + cr$ where cc is the cost of creation, e.g. payments to the author; cc is the cost of . . . preparing the information for publication; cm is the cost of marketing, including promotional expenses, distribution costs and costs of billing and collecting; and cr is the cost of copying (reproduction).

formation will generally pay a higher price than information users seeking general information.⁴⁶

Information users also generally find pricing structure variations within each market segment.⁴⁷ For example, subscription models may charge a basic fee for unlimited access,⁴⁸ or a basic fee for a fixed level of access plus an additional time-based fee for access beyond the fixed level.⁴⁹ Transactional pricing models may charge based upon the number of searches performed or upon the volume of information retrieved or extracted.⁵⁰ Other pricing models allow free public access to a certain amount of information, and restrict access to more specialized information to paid subscribers.⁵¹ Finally, some pricing models incorporate features of both the subscription and transaction models⁵² and permit the information user to choose the pricing scheme that maximizes usability while minimizing costs.⁵³

Perritt, *supra* note 4, at 283-84.

46. Griffith Interview, *supra* note 40; Perritt, *supra* note 4, at 276.

47. See Perritt, *supra* note 4, at 284 (describing various pricing options available through Westlaw).

48. For example, CD-ROM subscriptions typically provide unlimited access to an optical disk, along with periodic updates, for a fixed fee; CCH CD-ROM and Online for Windows (CCH) offers the Medicare and Medicaid Guide along with various other health law materials on optical disk with monthly updates; and local Internet access providers, as well as some centralized dial-up services such as America Online, offer an option for purchasing unlimited access.

49. Griffith Interview, *supra* note 40. For example, the CCH product noted above offers access to an accompanying online service, charged on an hourly basis, that provides access to the latest health and tax law materials. See *supra* note 48.

50. *Id.*

51. For example, Environmental RouteNet, a service offered by Cambridge Scientific, focuses on environmental information. Routenet also engages in price discrimination: individual users may access for \$50 per month, while institutional prices start at \$8,000 per year for eight users. See Paul Blake, *Database Traditionals Get Caught Up in the Web*, INFO. TODAY, Sept. 1, 1995, available in Westlaw, Allnewsplus File; see also *United States Courts Southern District of Texas* (visited May 6, 1997) <<http://www.txs.uscourts.gov>> (permitting free access to certain data via the Internet but imposing time-based fees via a stand alone BBS (PACER) for other data).

52. Examples include LEXIS/NEXIS and Westlaw.

53. *Id.*; see also John B. Kennedy & Shoshana R. Dweck, *Publishers, Authors*

Although variations in the database market structure and price models may reflect some degree of competition,⁵⁴ commentators have noted that the market operates at a suboptimal level because of the failure of existing legal regimes to protect adequately the investment required to produce valuable, commercial databases.⁵⁵

B. *Protection Afforded Database Makers by Existing Legal Regimes*

Database makers and rightholders⁵⁶ seeking to market their databases can obtain some degree of protection from existing legal regimes.⁵⁷ This section briefly explores, in

Battle Over Electronic Rights, NAT'L L.J., Oct. 28, 1996, at C17 (noting that publishers are experimenting with tiered subscriptions, per-article, and time-based pricing mechanisms).

54. *But see* Reichman & Samuelson, *supra* note 4, at 69 (noting that anecdotal evidence suggests that database markets are "almost universally characterized by a distinct absence of competition"). While this proposition may be true of markets dominated by database makers who are also the sole source for the data sought, the pricing options available to customers seeking the same type of information, *see supra* notes 47-53 and accompanying text, the high level of merger and acquisition activity in the business database market, and falling operating margins, indicate some level of competition in the database market. *See* NEVIN, *supra* note 40, at 81.

55. *See supra* notes 5, 8; Reichman & Samuelson, *supra* note 4, at 55 (noting that the risk of market failure tends to keep the production of information goods at suboptimal levels); *see also* Reichman, *supra* note 10, at 2491 (noting that copyright's creativity requirement could "exclude many of the most commercially and scientifically important databases").

56. Rights under the three *sui generis* regimes initially vest in the database maker, but are freely transferable thereafter. *See* Database Directive, *supra* note 1, art. 7(3), O.J. L 77/20, at 26 (1996); *WIPO Proposal*, *supra* note 1, art. 4(2) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996); H.R. REP. NO. 3531, *supra* note 1, § 2 (defining "database owner").

57. Database makers not seeking to market their databases who also keep their databases confidential might obtain trade secret protection. *See, e.g.,* Mississippi Uniform Trade Secrets Act, MISS. CODE ANN. §§ 75-26-1 to -19 (1996); Economic Espionage Act of 1996, Pub. L. No. 104-194, 110 Stat. 3488 (1996) (codified at 18 U.S.C.A. §§ 1831-1839 (West Supp. 1996)) (making theft of trade secrets a federal crime); RESTATEMENT (THIRD) OF UNFAIR COMPETITION LAW §§ 39-45 (1995). Database makers may also benefit from criminal laws designed to deter computer-related crime. *See* Rosler, *supra* note 11, at 131 (stating that such laws have been enacted in 49 states).

turn, the strengths and weaknesses of copyright, contract, and unfair competition law, three regimes that offer some protection to databases published in the marketplace.⁵⁸

1. Protection Afforded by Copyright

One might expect that copyright, an institution designed to “promote the Progress of Science and useful Arts,”⁵⁹ would embrace a form of intellectual property with the potential to enhance access to, and increase the availability of, information.⁶⁰ Indeed, databases whose final form exhibits creative selection and arrangement⁶¹ secure protection “against the world.”⁶² However, as courts and commentators have recognized, the protection afforded by copyright law to databases, except in a few European countries,⁶³ consists of little more than a thin veil that quickly unravels as content becomes more factual and necessary.⁶⁴

Some commentators have noted that creatively selecting and arranging a database may reduce data availability and accessibility.⁶⁵ For example, creatively selecting data ex-

58. In addition, the so-called Nordic “catalogue rule” protects “catalogues, tables, and similar compilations in which a large number of particulars have been summarized, including databases, for ten years after first publication.” See Reichman, *supra* note 10, at 2492-93 (quoting Gunnar Karnell, *The Nordic Catalogue Rule*, in PROTECTING WORKS OF FACT 67-68 (E. J. Dommering & P. B. Hugenholtz eds., 1991)) (internal quotes omitted).

59. U.S. CONST., art. I, § 8, cl. 8.

60. Paradoxically, this very purpose is often cited as the basis for limiting copyright in factual information. See *Feist*, 499 U.S. at 354 (“Throughout history, copyright law has recognized a greater need to disseminate factual works . . .”) (citation omitted).

61. See *supra* note 8.

62. See *Zeidenberg*, 86 F.3d at 1454.

63. See *supra* note 8.

64. See Glynn S. Lunney, Jr., *Reexamining Copyrights’ Incentive Access Paradigm*, 49 VAND. L. REV. 483, 567-71 (1996) (discussing copyright’s questionable premise that by limiting the scope of protection for necessary works, society will have greater access to such works); see *supra* notes 5, 12.

65. See Ginsburg, *supra* note 6, at 347-49; Denicola, *supra* note 12, at 530; see *supra* note 38.

cludes potentially desirable information,⁶⁶ while creatively arranging data, assuming arrangement is not functionally-dictated, may frustrate information users.⁶⁷ In addition, because many database makers add superfluous original, value-added data in an attempt to avail themselves of the cloak of copyright, the selection and arrangement criteria may increase the cost of databases without providing corresponding gains to database users.⁶⁸

Other commentators have recognized that because copyright rests in a large degree upon broad cultural policies, and not upon general economic considerations, copyright is ill-suited to protect functional business tools like databases that compete in the general market.⁶⁹ That is, by linking the existence and degree of protection to the superficial final form of the product, rather than to total production costs, copyright fails to offer sufficient production incentives to encourage production of these valuable business tools,⁷⁰ and effectively excludes “many of the most commercially and scientifically important databases.”⁷¹

Copyright, then, leaves databases whose content is factual or necessary or is otherwise considered noncreative (especially comprehensive, electronic databases that defer

66. See Ginsburg, *supra* note 6, at 344-45 (noting that the selection criterion discourages comprehensive data collections); see also Reichman, *supra* note 10, at 2491.

67. See Ginsburg, *supra* note 6, at 344-45. Consequently, electronic database makers often forego imposition of selection and arrangement criteria in favor of permitting users to dynamically impose their own selection and arrangement criteria. *Id.*

68. *Id.* at 344-46.

69. Cf. Reichman, *supra* note 10, at 2452-53 (noting that copyright promotes certain cultural policies at the expense of economic efficiency); Reichman, *supra* note 3, at 806 n.45 (copyright deliberately subordinates the price-setting function of the market to broader cultural policies); see Denicola, *supra* note 12, at 516 (noting that “the very vocabulary of copyright law is ill-suited to analyze property rights in works of nonfiction[.]” such as databases).

70. See Denicola, *supra* note 12, at 530.

71. See Reichman, *supra* note 10, at 2491 (creativity requirement could exclude many of the most commercially and scientifically important databases).

completely to the information consumer's judgment regarding data arrangement and selection)⁷² exposed to parasitic competitors and information Samaritans who extract and recompile the raw, unfiltered data to produce competing products.⁷³

2. Protection Afforded by Contract

Through mutually beneficial exchanges, contracts permit the private ordering of resources (risk-allocation) essential to the efficient functioning of a market economy.⁷⁴ Database makers can obtain differing degrees of contractual protection, depending on whether they make the database publicly available or keep it under private control.⁷⁵

The limits of contractual protection for publicly-available databases are apparent after considering that unlike a copyright, which is enforceable against the world,⁷⁶ a contract is enforceable only against the contracting parties.⁷⁷ Thus,

72. See Ginsburg, *supra* note 6, at 345 (computerized databases are designed to permit users to impose their own arrangement and selection criteria).

73. See Reichman, *supra* note 10, at 2490-91. Information Samaritans might distribute the data and effectively destroy a large portion of the maker's market, while parasitic competitors ("pirates") might compete head-to-head with the database maker, or might produce and market a value-added product before the maker produces the product. Reichman & Samuelson, *supra* note 4, at 67-68. In the latter case, the pirate might capitalize on advantages otherwise held by the maker; e.g., established database makers have production facilities, managerial experience, distribution channels, and reputational advantages. See Perritt, *supra* note 4, at 279 (noting some of the market-related phenomena which tend to reduce the pirate's ability to compete head-to-head with the maker).

74. See Zeidenberg, 86 F.3d at 1455 (citing *American Airlines v. Wolens*, 513 U.S. 219, 115 S. Ct. 817, 824-26 (1995); see generally 3 E. ALLAN FARNSWORTH, FARNSWORTH ON CONTRACTS § 12.3, at 153-54 n.1 (2d ed. 1990).

75. See GLOBAL ACCESS, *supra* note 4, at 7-8 (discussing relative vulnerabilities of public and private databases). As used herein, "publicly-available" means that the database or its contents are physically available to the public in paper or electronic form.

76. See Zeidenberg, 86 F.3d at 1454.

77. See generally JOHN D. CALAMARI & JOSEPH M. PERILLO, CONTRACTS (3d ed. 1987). Although today's technology permits preapproved computer-to-computer transactions with no human interaction, Stewart I. Edelstein, *Litigating in Cyberspace: Contracts on the Internet*, TRIAL, Oct. 1996, at 16, "effective contract

unless the database maker can restrict redistribution, or control access to the database contents through technological mechanisms, publicly-available databases are susceptible to extraction and redistribution by parasitic competitors and information Samaritans who are not parties to the contract.⁷⁸

On the other hand, privately-controlled databases—those databases to which access is restricted⁷⁹—enable database makers to “track and charge for every instance of electronic access.”⁸⁰ Although such a database maker can theoretically “reject the state-imposed cultural bargain”⁸¹ of copyright law and “impose monopoly prices and potentially oppressive terms on users,”⁸² there are several practical limits on her ability to do so.

First, unless the database consists of sole-source data,⁸³ which in some cases could trigger antitrust scrutiny,⁸⁴ the database maker faces the threat of market competition. Second, database makers who make their product available only through telecommunications devices necessarily limit their market to those with access to such devices.⁸⁵

protection for content . . . [providers] is . . . problematic” on open (public) systems like the World Wide Web because “the transaction costs of effective negotiations are high.” See Perritt, *supra* note 4, at 290-91.

78. See Reichman & Samuelson, *supra* note 4, at 65-68 (discussing the vulnerability of publicly-available databases); see also *supra* note 5 (discussing and defining “information Samaritan”).

79. For example, access could be restricted by limiting distribution to contracting parties via an electronic bulletin board or by other technological means such as encryption devices. See *supra* note 4.

80. Reichman & Samuelson, *supra* note 4, at 70.

81. *Id.*

82. *Id.* Note that the Database Directive voids contracts that violate certain user rights. See Database Directive, *supra* note 1, art. 15, O.J. L 77/20, at 27 (1996); see also *infra* notes 167-70 and accompanying text.

83. See *supra* note 24.

84. See, e.g., John R. Wilke, *FTC Charges ADP Formed a Monopoly in the Junk Business*, WALL ST. J., Nov. 15, 1996, at A4 (reporting that the Federal Trade Commission filed suit against ADP for allegedly forming an information monopoly); see *infra* notes 136, 201.

85. For example, although the Internet operates in over 75 countries, it reaches only approximately 25 million people who access the Internet via approximately two million personal computers. See Charles Clark, *The Copyright*

Third, contracts provide protection to databases, whether publicly-available or privately-controlled, only if the parties voluntarily abide by the contractual terms, or if the contractual terms are otherwise enforced by the judicial machinery.⁸⁶ Commercially-minded courts have recognized that enforcing private agreements is fundamental to market efficiency and stability,⁸⁷ and that the enforcement of private agreements respecting intellectual property serves the “same procompetitive functions as does the law of trade secrets.”⁸⁸ However, some courts have saddled the “unruly horse” of public policy⁸⁹ and rejected the efforts of intellectual property producers to protect by contract that which copyright fails to protect.⁹⁰

Contracts, then, leave databases exposed to parasitic competitors and information Samaritans not in privity of contract with the database maker,⁹¹ and to the risk that a particular court will, on public policy grounds, refuse to enforce a private contractual agreement regarding databases.⁹²

3. Protection Afforded by Unfair Competition Law

Database makers who fail to obtain adequate protection from copyright and contract can sometimes obtain protection from the misappropriation branch of unfair competition

Environment for the Publisher in the Digital World 18 (visited May 11, 1997) <<http://www.grainger.uiuc.edu/icsu/clark.htm>>.

86. See, e.g., 1 E. ALLAN FARNSWORTH, FARNSWORTH ON CONTRACTS § 1.1, at 4 n.1 (2d ed. 1990) (citing RESTATEMENT (SECOND) OF CONTRACTS § 1 (1981) (“A contract is a promise or set of promises for the breach of which the law gives a remedy . . .”).

87. *American Airlines*, 115 S. Ct. at 826.

88. See *Zeidenberg*, 86 F.3d at 1455.

89. See 2 E. ALLAN FARNSWORTH, FARNSWORTH ON CONTRACTS § 5.2, at 8 n.1 (2d ed. 1990) (quoting *Richardson v. Mellish*, 2 Bing. 229, 252, 130 Eng. Rep. 294, 303 (1824)); cf. *Zeidenberg* 908 F. Supp. at 657-59.

90. See, e.g., *ProCD v. Zeidenberg*, 908 F. Supp. 640 (W.D. Wis.), *rev'd*, 86 F.3d 1447 (7th Cir. 1996).

91. Perritt, *supra* note 4, at 292 (“contract protection is unavailable except when privity of contract exists”).

92. See *supra* notes 89-90.

law.⁹³ The tort of misappropriation protects investors from the malcompetitive behavior of free-riding competitors.⁹⁴

Unfortunately, the *aegis* of unfair competition law ebbs and flows with the tide, a tide that follows not the moon, but the *sub rosa* principles held by individual judges.⁹⁵ The resulting unpredictability of the remedy renders unfair competition law less than an optimal means of protecting and stimulating investment in databases.⁹⁶

Unfair competition law, then, while affording some protection to database makers from malcompetitive free riders,⁹⁷ does not protect database makers from information Samaritans,⁹⁸ and does not, because of the uncertainty of a remedy, provide a predictable basis upon which to make an investment decision.⁹⁹

93. *International News Serv. v. Associated Press*, 248 U.S. 215 (1918) (giving birth to the tort of misappropriation in the United States); Denicola, *supra* note 12, at 517 n.7 (collecting cases).

94. See C. Owen Paepke, *An Economic Interpretation of the Misappropriation Doctrine: Common Law Protection for Investments in Innovation*, 2 HIGH TECH. L.J. 55, 68-69 (1987) (describing three common elements as: (1) investment by the plaintiff in creating a product; (2) use of that investment or product in competition with the plaintiff; and (3) commercial damage to the plaintiff); Reichman & Samuelson, *supra* note 4, at 132 (citing domestic and foreign authorities recognizing the tort); Restatement (Third) of Unfair Competition Law § 38. But see Gary Myers, *The Restatement's Rejection of the Misappropriation Tort: A Victory for the Public Domain*, 47 S.C. L. REV. 673, 678 (1996) (arguing that the Restatement (Third) of Unfair Competition Law rejects the tort of misappropriation as an independent cause of action).

95. See Reichman, *supra* note 10, at 2476.

96. Reichman & Samuelson, *supra* note 4, at 131; Paepke, *supra* note 94, at 68-70 (noting that the tort lacks consistent formulation and application).

97. *Id.*; see *supra* note 93 (citing *INS* and a source collecting cases following the *INS* rationale).

98. But see Paepke, *supra* note 94, at 68-69 (noting that some courts have eliminated the element of competition); see generally RALPH S. BROWN & ROBERT C. DENICOLA, *CASES ON COPYRIGHT, UNFAIR COMPETITION, AND OTHER TOPICS BEARING ON THE PROTECTION OF LITERARY, MUSICAL, AND ARTISTIC WORKS* 580-83 (6th ed. 1995) (describing the reception and evolution of *INS* in the federal courts).

99. See Samuelson, *supra* note 11, at 9 (noting that the drafters of the Initial Proposal regarded EC unfair competition law as insufficient to produce adequate incentives to invest in database production).

Thus, while the mosaic of these three legal regimes offers some protection to database makers from the malcompetitive or parasitic behavior of competitors, users, and information Samaritans, existing legal regimes, both singularly and collectively, leave database makers exposed to free riders who can market a competing product at a fraction of the database maker's cost,¹⁰⁰ and to parasitic users and information Samaritans who can wreak similar havoc to the database maker's investments.¹⁰¹ As a result, many commentators have recognized the need for additional protection to increase incentives to produce databases, those valuable business tools that place information at the fingertips of the world,¹⁰² without extinguishing competition, the ultimate guardian of consumers in market economies.¹⁰³

In response to this perceived need to vindicate the competitive ethos in database markets, the EC adopted the Data-

100. A database maker's production costs can be expressed as $P = dC + dP + dM + dR$, where (P) equals the sum of data collection, purchase, generation, and validation costs (dC); plus data compiling and presentation costs (dP); plus database marketing, distribution, billing and collection costs (dM); plus database reproduction costs (dR). See Perritt, *supra* note 4, at 277 (expressing the costs of an intellectual property originator). A database pirate's production costs can be expressed as $p = dA + dT + dM + dR + dL$; where (p) equals the sum of data acquisition costs in copying from the database maker (dA); plus data transformation costs (dT); plus database marketing, distribution, billing and collection costs (dM); plus database reproduction costs (dR); plus legal liability costs (dL). *Id.* (expressing the costs of an intellectual property pirate). Assuming database marketing (dM) and reproduction (dR) costs are equal for the maker and the pirate, the pirate cannot compete in the same market with the database maker on a price basis unless $P > p$, or $dC + dP > dA + dT + dL$. See *id.* However, as discussed above, head-to-head competition is not the only way a pirate can damage the maker's investment. See *supra* note 73.

101. *Id.*; see also *supra* notes 45, 73 and accompanying text (discussing susceptibility of databases to information Samaritans).

102. See *supra* note 38 and accompanying text; see generally Wendy J. Gordon, *On Owning Information: Intellectual Property and the Restitutionary Impulse*, 78 VA. L. REV. 149, 222-26 (1992) (describing a new tort of "malcompetitive copying" when defendants knowingly copy protected intangibles in markets exhibiting asymmetrical market failure that damage the creator's market interests without providing an equal value to the creator in the long run).

103. See *supra* note 28.

base Directive,¹⁰⁴ which prompted the United States and the World Intellectual Property Organization to advance similar proposals.¹⁰⁵

II. COMPARISON OF THE DATABASE DIRECTIVE WITH THE PROPOSALS

This part compares the U.S. and WIPO Proposals with the Database Directive (collectively referred to as “regimes”). While the WIPO Proposal generally tracks the Database Directive, the U.S. Proposal, H.R. 3531, differs in several significant respects. The first apparent difference lies in the broader definition of “database” found in H.R. 3531.¹⁰⁶

A. Scope of Protection

To understand the potential scope of protection afforded by the regimes, this section first compares the regimes’ definition of “database” and the operative terms which define and circumscribe the *sui generis* rights provided to database makers.¹⁰⁷ This section then compares the protection afforded by the regimes to existing databases, and each regime’s affect on existing rights and obligations.

1. Database Defined

The Database Directive and the WIPO Proposal define “database” as a collection of *independent* works, data or other materials arranged in a systematic or methodical way capable of being individually accessed by any means.¹⁰⁸ In contrast, H.R. 3531 defines “database” as “a collection, assembly or compilation, in any form . . . of works, data or other mate-

104. See Database Directive, *supra* note 1, recital 1, O.J. L 77/20, at 20 (1996) (databases are not sufficiently protected in Member States).

105. See *supra* notes 1, 14-20 and accompanying text.

106. See H.R. REP. NO. 3531, *supra* note 1, § 2.

107. See *supra* notes 13, 56.

108. See Database Directive, *supra* note 1, art. 1(2), O.J. L 77/20, at 24 (1996); WIPO Proposal, *supra* note 1, art. 2(1) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

rial, arranged in a systematic or methodical way.”¹⁰⁹

H.R. 3531’s failure to require works to be independent could sweep recordings of audiovisual, cinematographic, literary, or musical works under its protective cloak; works that the Database Directive and the WIPO Proposal expressly disclaim.¹¹⁰ Thus, initially, H.R. 3531 appears to define “database” more broadly than either the Database Directive or the WIPO Proposal.

However, H.R. 3531, like the Database Directive and the WIPO Proposal, extends its initial cloak of protection only to databases that are the product of a quantitative or qualitative substantial investment of financial or other resources in the “collection, assembly, verification, organization or presentation” of the contents of a database.¹¹¹ Therefore, although H.R. 3531 may initially define “database” more broadly than the Database Directive or the WIPO Proposal, the substantial investment requirement, assuming it is interpreted similarly under each regime,¹¹² reduces the potential definitional difference.¹¹³

109. See H.R. REP. NO. 3531, *supra* note 1, § 2.

110. See Database Directive, *supra* note 1, recital 17, O.J. L 77/20, at 21 (1996); WIPO Proposal, *supra* note 1, Note 2.03 WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

111. See H.R. REP. NO. 3531, *supra* note 1, § 3(a); WIPO Proposal, *supra* note 1, art. 2(4) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996); *cf.* Database Directive, *supra* note 1, art. 7(1), O.J. L 77/20, at 25 (1996) (substantial investment in the obtaining, verification or presentation of database contents).

112. With the exception of the disclaimer regarding audiovisual works noted above, neither the Database Directive nor the Proposals define “substantial investment.” H.R. REP. NO. 3531, *supra* note 1, § 3(a); WIPO Proposal, *supra* note 1, art. 2(4) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996); *cf.* Database Directive, *supra* note 1, art. 7(1), O.J. L 77/20, at 25 (1996).

113. *But see* Reichman & Samuelson, *supra* note 4, at 98-99 (arguing that the definition in H.R. 3531 is so broad that it might cover noncopyrightable components of computer programs and scientific or historical theories based on fact or data). However, H.R. 3531 flatly excludes computer programs from the scope of its protection. See H.R. REP. NO. 3531, *supra* note 1, § 3(d) (“computer programs are not subject to this Act, including without limitation any computer programs used in the manufacture, production, operation or maintenance of a database”). Moreover, the argument that H.R. 3531 defines “database” broadly enough to

2. *Sui Generis* Rights Granted

Assuming the database passes the substantial investment threshold, the database maker¹¹⁴ gains two complementary rights: (1) the right to prohibit extraction of, and (2) the right to prohibit reutilization of (the Database Directive), or utilization of (the WIPO Proposal), or use or reuse of (H.R. 3531), all or a substantial part of the database contents.¹¹⁵ Thus, to understand the breadth of the complementary rights, one must examine the definitions of “extraction,” “reutilization,” “utilization,”¹¹⁶ or “use” and “reuse,” as the case may be, and “substantial part.”¹¹⁷

cover scientific or historical theories based on significant compilations of facts or data would apply equally to the Database Directive and the WIPO Proposal. With today’s digital technology, even three dimensional objects with appropriate sensing devices can be reduced to a series of ones and zeros that can be compiled and collected in a database that would find protection under each regime, provided the database meets the benchmark of protection—substantial investment. Although segments of scientific and historical theory, along with anything else (except computer programs) that can be reduced to a series of ones and zeros, can be compiled in database form and protected under either regime, the regimes require the second comer only to obtain those ones and zeros from other sources, or from the database maker by fair and honest means, for example, by purchasing a license.

114. See *supra* note 56.

115. The maker or rightholder is afforded two powers characteristically associated with the bundle of rights deemed property: the power to exclude and the power to transfer. See generally Wendy J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533, 1546 (1993); Database Directive, *supra* note 1, art. 7(2), O.J. L 77/20, at 26 (1996); WIPO Proposal, *supra* note 1, art. 2(2), (4) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996) (defining “extraction” and “utilization”), art. 3(1) (granting the right to prohibit extraction or utilization); H.R. REP. NO. 3531, *supra* note 1, § 4. The regimes do not create *de jure* property rights in data. See *infra* notes 211-13.

116. Because the meaning of “utilization” as used in the WIPO Proposal is substantially the same as the terms “use” and “reuse” as used in U.S. Proposal, see *infra* note 122, for the reader’s and writer’s benefit, the term “utilization” is not referred to in the text hereinafter.

117. The “depth” of the complementary rights (i.e., the liability of downstream “innocent users” who may unknowingly reuse database contents made available by an initial infringer) is not addressed by either regime. However, knowledge is required to impose criminal liability under H.R. 3531. See H.R. REP. NO. 3531, *supra* note 1, §§ 8, 13.

a. The Extraction Right

The Database Directive and the Proposals define “extraction” as “the permanent or temporary transfer of all or a substantial part of the contents of a database” to another medium by any means or in any form.¹¹⁸ Although H.R. 3531 explicitly extends the extraction right to copies of a database,¹¹⁹ the extraction right provided by the Database Directive and the WIPO Proposal would also protect copies.¹²⁰ Thus, the regimes define the extraction right substantively the same.

b. The Complementary Reutilization, or Use and Reuse, Right

The Database Directive and the Proposals define the complementary reutilization or use right differently in several respects. First, the Database Directive grants a right to prohibit only reutilization,¹²¹ while the Proposals grant a right to prohibit use and reuse.¹²² Second, “reutilization” as defined by the Database Directive¹²³ requires a positive act—

118. See Database Directive, *supra* note 1, art. 7(2)(a), O.J. L 77/20, at 26 (1996); WIPO Proposal, *supra* note 1, art. 2(2) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996); H.R. REP. NO. 3531, *supra* note 1, § 2.

119. See H.R. REP. NO. 3531, *supra* note 1, § 2.

120. A copy necessarily requires transfer of the entire contents of a database, an act prohibited by each regime. See *supra* note 115.

121. The Database Directive defines “reutilization” as “any form of making available to the public all or a substantial part of the contents of a database by the distribution of copies, by renting, by online, or other forms of transmission.” See Database Directive, *supra* note 1, art. 7(2)(b), O.J. L 77/20, at 26 (1996).

122. See *supra* note 116. The WIPO Proposal defines “utilization” as:

[T]he making available to the public of all or a substantial part of the contents of a database by any means, including by the distribution of copies, by renting, or by online, or other forms of transmission, including making the same available to the public at a place and at a time individually chosen by each member of the public.

WIPO Proposal, *supra* note 1, art. 2(6) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996). H.R. 3531 defines “use” and “reuse” as “making available all or a substantial part . . . of the contents of a database, or [providing] access [there]to.” See H.R. REP. NO. 3531, *supra* note 1, § 2.

123. See Database Directive, *supra* note 1, arts. 7(1), 7(2)(b), O.J. L 77/20, at

transmission—while “use” as defined by the Proposals could theoretically occur without a positive act.¹²⁴ Thus, based solely on the definition of this complementary right, the Proposals grant the database maker a broader right.

c. Breadth of the *Sui Generis* Rights

As noted above,¹²⁵ the breadth of the right to prevent extraction and the right to prevent reutilization, or use and reuse, is linked to the meaning of “substantial part.”¹²⁶ Here, the WIPO Proposal diverges slightly, and H.R. 3531 diverges significantly, from the Database Directive.

The WIPO Proposal defines “substantial part” as “any portion of the database, including an accumulation of small portions, that is of qualitative or quantitative significance to the value of a database.”¹²⁷ The WIPO Proposal therefore provides more guidance to courts charged with interpreting it than does the Database Directive, which purposely left the definition of “substantial part” to the European Court of Justice.¹²⁸ However, because the Database Directive specifically prohibits repeated and systematic extraction or reutilization of insubstantial parts of the contents of a database which conflict with the normal exploitation of the database or

25, 26 (1996); *supra* note 120.

124. See *WIPO Proposal*, *supra* note 1, arts. 2(6), 3(1) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996) (prohibiting use by making available to the public at a time and place individually chosen by a member of the public); see also H.R. REP. NO. 3531, *supra* note 1, §§ 2, 4(a)(1) (prohibiting use or reuse by providing access).

125. See *supra* notes 115-17 and accompanying text (the rights to prevent extraction and reutilization, or use and reuse, extends only to all or a substantial part of the database).

126. See *infra* notes 127-30 (explaining the regimes’ differing definitions of substantial part).

127. *WIPO Proposal*, *supra* note 1, art. 2(5) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

128. See Jens-L. Gaster, *The New EU Directive Concerning the Legal Protection of Data Bases*, in 3 FORDHAM INTERNATIONAL INTELLECTUAL PROPERTY LAW & POLICY, *supra* note 11, at 4 (explaining that the Commission deliberately left the task of defining “substantial part” to the European Court of Justice).

which unreasonably prejudice the legitimate interests of the database maker,¹²⁹ a court could easily ascribe the same meaning to the term, whether interpreting the term as found in the WIPO Proposal or the Database Directive.

H.R. 3531, in contrast, implicitly defines “substantial part” by defining “insubstantial part” as “any portion of the contents of a database whose extraction, use or reuse does not diminish the value of the database, conflict with a normal exploitation of the database or adversely affect the actual or *potential* market, for the database.”¹³⁰ Although one could argue that the legitimate interests of the database maker could include the potential market, the Database Directive prohibits only acts which “unreasonably prejudice” those legitimate interests,¹³¹ while H.R. 3531 broadly prohibits extractions, uses, and reuses that merely “adversely affect” the actual or potential market.¹³² H.R. 3531 illustrates its protective sweep by providing examples of extractions, uses, and reuses of database contents that would constitute infringement.¹³³

Some commentators have suggested that the foregoing provisions of H.R. 3531, coupled with its severe criminal penalties,¹³⁴ have the “potential for impeding virtually any

129. See Database Directive, *supra* note 1, art. 7(5), O.J. L 77/20, at 26 (1996).

130. H.R. REP. NO. 3531, *supra* note 1, § 2 (emphasis supplied).

131. See Database Directive, *supra* note 1, arts. 7(5), 8(2), O.J. L 77/20, at 26 (1996).

132. H.R. REP. NO. 3531, *supra* note 1, §§ 2 (defining “insubstantial part”), 4(a) (prohibited acts).

133. Infringing acts include extraction, use, or reuse of all or a substantial part of the database contents: (1) in a product or service directly or indirectly competing with a database from which it was extracted; (2) in a product or service directly or indirectly competing in any market in which the database owner has a demonstrable interest or expectation in licensing or otherwise; (3) in a product or service for customers who might otherwise reasonably be expected to be customers for the database; or (4) in an organization, by or for multiple persons within the organization, in lieu of an additional authorized use or reuse. H.R. REP. NO. 3531, *supra* note 1, § 4(b).

134. H.R. REP. NO. 3531, *supra* note 1, § 8 (providing for a fine of \$250,000 or imprisonment for five years, or both, for first-time offenders who willfully, and

judge made ['fair use'] exceptions"¹³⁵ and, more importantly, may cast a shadow on the availability of any pro-competitive "Magill-like"¹³⁶ exceptions to the database maker's "unbounded derivative work right."¹³⁷ Nevertheless, despite H.R. 3531's potential breadth, it is narrower than the Database Directive and the WIPO Proposal in two significant ways.¹³⁸

First, H.R. 3531 expressly withholds protection for databases made by governmental entities, and by governmental

for commercial advantage or who cause \$10,000 damage to the database owner in one calendar year, violate the database owners *sui generis* rights). The U.S. Proposal also provides a detailed set of civil remedies for violating the database makers' extraction and reutilization rights. See H.R. REP. NO. 3531, *supra* note 1, § 12 (providing injunctive relief, impoundment, actual damages or statutory damages, costs, and attorneys' fees in certain cases, and treble damages against persons adjudged a violator of §§ 10 or 11 within the previous three years). In contrast, violating the database makers' extraction and reutilization rights under the Directive triggers "appropriate remedies." See Database Directive, *supra* note 1, art. 12, O.J. L 77/20, at 27 (1996). Under the WIPO Proposal, Contracting Parties must provide "expeditious remedies to prevent infringements, and remedies that constitute a deterrent to further infringement." *WIPO Proposal*, *supra* note 1, art. 13 (Alternative B) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996); see also *id.* (Alternative A incorporating the Annex).

135. Reichman & Samuelson, *supra* note 4, at 99.

136. *Radio Telefis Eireann v. Commission*, Case 69/89, [1991] E.C.R. 485, 4 C.M.L.R. 586 (Ct. First Instance); *British Broadcasting Corp. v. Commission*, Case 70/89, [1991] E.C.R. 535, 4 C.M.L.R. 669 (Ct. First Instance); *Independent Television Publications Ltd. v. Commission*, Case 76/89, [1991] E.C.R. 575, 4 C.M.L.R. 775 (Ct. First Instance) (known collectively as "Magill") (affirming a compulsory licensing order against a copyright holder who used the copyright to prevent a competitor from producing a value-added product (a television program guide); see also *infra* notes 276-92 and accompanying text (discussing other swords available in the EC).

137. See Reichman & Samuelson, *supra* note 4, at 101.

138. In addition, to the extent that the Commerce Clause, U.S. CONST. art. 1, § 8, cl.(3), retains any vitality, it places a jurisdictional limit on Congress's ability to regulate databases. Cf. *United States v. Lopez*, 514 U.S. 549 (1995) (invalidating Gun-Free School Zones Act of 1990 as beyond Congress's ability to regulate under the Commerce Clause). Of course, any limit inherent in the Commerce Clause would not affect a properly executed treaty. Cf. *Missouri v. Holland*, 252 U.S. 416 (1920) (unless forbidden by the United States Constitution, the federal government can act in matters where a national interest exists that can only be protected by acting in concert with another nation).

agents in their official capacities.¹³⁹ Second, H.R. 3531 insulates information users from liability for the “use or reuse of database contents lawfully extracted from a database[] prior to the effective date of th[e] Act.”¹⁴⁰

3. Rights and Obligations in Existing Databases

The Proposals diverge from the Database Directive in that the Proposals would sweep all existing databases under their cloaks of protection,¹⁴¹ while the Database Directive requires protection of only those databases made after January 1, 1983.¹⁴² The regimes converge in two respects. First, each regime provides that the *sui generis* rights are without prejudice to other rights or obligations in a database or its contents.¹⁴³ Second, neither regime extends copyright-like protection to the contents of the database. Instead, each regime requires users or potential competitors either to collect the information independently, or to pay the database maker for the collected information.¹⁴⁴ In essence, the regimes imbue

139. H.R. REP. NO. 3531, *supra* note 1, § 2. However, H.R. 3531 does not exclude databases merely because its contents have been obtained from a governmental entity. *Id.* § 3(c). To accommodate this derogation, the WIPO Proposal makes the matter of protection granted to databases made by governmental entity or their agents a matter for national legislation. *WIPO Proposal, supra* note 1, art. 5(2) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

140. H.R. REP. NO. 3531, *supra* note 1, § 15 (providing that H.R. 3531 would become effective upon enactment). In contrast, the WIPO Proposal permits adoption of a limited two-year window, during which time copies lawfully made of databases before the effective date of the treaty may be distributed to the public, see *WIPO Proposal, supra* note 1, art. 11(2), while the Database Directive provides only that its *sui generis* regime “shall be without prejudice to any acts concluded and rights acquired” before the effective date. Database Directive, *supra* note 1, art. 14(4), O.J. L 77/20, at 27 (1996).

141. *WIPO Proposal, supra* note 1, art. 11(1) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996); H.R. REP. NO. 3531, *supra* note 1, § 15.

142. See Database Directive, *supra* note 1, art. 14(3), O.J. L 77/20, at 27 (1996).

143. *Id.* art. 13, O.J. L 77/20, at 27 (1996); H.R. REP. NO. 3531, *supra* note 1, § 9; *WIPO Proposal, supra* note 1, art. 12 WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

144. Database Directive, *supra* note 1, recital 45, O.J. L 77/20, at 23 (1996); *WIPO Proposal, supra* note 1, Note 3.02 WIPO Doc. CRNR/DC/6 (Aug. 30, 1996); H.R. REP. NO. 3531, *supra* note 1, § 5(b).

databases with a portable toll fence.¹⁴⁵

B. *Beneficiaries of Protection*

The Database Directive protects databases made by¹⁴⁶ nationals and habitual residents of Member States;¹⁴⁷ by companies and firms formed according to the law of a Member State and having their central administration or principal place of business within the EC;¹⁴⁸ and by companies and firms having their registered office within the EC, provided the company or firm has a genuine economic link to a Member State.¹⁴⁹ The Database Directive also protects databases manufactured in third countries by agreement of the Council of the European Union ("Council").¹⁵⁰

Similarly, the WIPO Proposal protects databases made by nationals and habitual residents of Contracting Parties;¹⁵¹ by companies, firms, and other legal entities having their central administration or principal place of business within a

145. See Gordon, *supra* note 7, at 855.

146. "Databases made by" means "database maker" as that term is defined by the regimes. See *supra* notes 13, 56.

147. Database Directive, *supra* note 1, art. 11(1), O.J. L 77/20, at 26 (1996).

148. *Id.* art. 11(2), O.J. L 77/20, at 27 (1996).

149. *Id.*

150. Database Directive, *supra* note 1, art. 11(3), O.J. L 77/20, at 27 (1996). Unless eligible under one of the first three options, or unless the United States enacts a statutory scheme offering comparable protection, American database makers could not avail themselves of the *sui generis* regime because the final option requires third countries to provide comparable protection (material reciprocity) to EC databases, Database Directive, *supra* note 1, recital 56, O.J. L 77/20, at 24 (1996), and because *Feist* prohibits United States copyright law from extending comparable protection. See *supra* note 12 (discussing the *Feist* decision). Although the material reciprocity requirement seemingly contravenes the most basic principle of the TRIPS agreement—national treatment—the Database Directive falls outside the TRIPS agreement. See Council Common Position No. 95/20, Statement of the Council's Reasons 19, O.J. C 288/02, at 28 (1995) [hereinafter Common Position] (*sui generis* right not linked to any existing international convention); Reichman, *supra* note 8, at 347-51.

151. See WIPO Proposal, *supra* note 1, arts. 6, 7(4) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

Contracting Party;¹⁵² and by companies, firms and other legal entities having their registered office in the territory of a Contracting Party, provided its operations have a genuine and ongoing economic link to a Contracting Party.¹⁵³ H.R. 3531, in contrast, protects databases made by natural and juristic persons,¹⁵⁴ but, as noted above,¹⁵⁵ specifically excludes governmental entities and certain governmental agents in their official capacities.¹⁵⁶

C. Term of Protection

Rather than providing a single initial term of protection, the regimes provide a two-stage initial term of protection.¹⁵⁷ The Database Directive and the WIPO Proposal, alternative B,¹⁵⁸ provide a fifteen-year term of protection, plus an additional fifteen years if the database is made available to the public before expiration of the initial term.¹⁵⁹ In contrast,

152. See *id.* art. 6(2), WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

153. *Id.* Note, however, that unlike the Database Directive, which adopts a material reciprocity standard, see *supra* note 150, the WIPO Proposal adopts the standard of national treatment by requiring Contracting Parties to grant database makers who are nationals of other Contracting Parties the rights granted by the Treaty and other rights granted to the nationals of the Contracting Party. See *WIPO Proposal*, *supra* note 1, art. 7(1) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

154. See H.R. REP. NO. 3531, *supra* note 1, § 2 (defining “juristic person” to exclude governmental entities).

155. See *supra* note 138 and accompanying text.

156. H.R. REP. NO. 3531, *supra* note 1, § 2.

157. See Database Directive, *supra* note 1, art. 10(1)-(2), O.J. L 77/20, at 26 (1996); *WIPO Proposal*, *supra* note 1, art. 8(1)-(2) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996); H.R. REP. NO. 3531, *supra* note 1, § 6(a).

158. See *WIPO Proposal*, *supra* note 1, art. 8(1)-(2) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996) (alternative A provides a 25-year term, while alternative B provides a 15-year term).

159. The initial and second terms begin on January 1 of the year following the date on which the database meets the requirements for protection, or is made available to the public. See Database Directive, *supra* note 1, art. 10(1)-(2), O.J. L 77/20, at 26 (1996); *WIPO Proposal*, *supra* note 1, art. 8(1)-(2) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996). The Initial Proposal limited the term of protection to 10 years. See Initial Proposal, *supra* note 11, art. 9(3), O.J. C 156/03, at 9 (1992). Apparently, the term of protection was increased to 15 years as a result of industry lobbying. See Suzanne Perry, *Longer Protection in Database Directive Proposed*,

H.R. 3531 provides a potentially perpetual initial term of protection,¹⁶⁰ plus an additional twenty-five years from the earlier of the date the database is made available to the public or is first placed in commercial use.¹⁶¹

In addition to the initial two-stage term of protection, the regimes provide the database maker an opportunity to extend the toll fence perpetually.¹⁶² However, the Database Directive and the WIPO Proposal require the same showing to extend the fence as is required to erect the toll fence: a substantial investment.¹⁶³ In contrast, H.R. 3531 requires only a “change of commercial significance” to extend the fence perpetually.¹⁶⁴

D. Exceptions: User Protections

The regimes protect legitimate users by providing exceptions to, and placing limitations on, the *sui generis* rights. For example, each regime avoids conferring a *de jure* monopoly

REUTER EUR. COMMUNITY REP., Mar. 17, 1993, *available in* Westlaw, Allnewsplus File.

160. Compare H.R. REP. NO. 3531, *supra* note 1, § 6(a) (term of protection is triggered by placing in commercial use or making available to the public) *with id.* § 3(b) (databases qualifying for protection under the act remain protected regardless of whether they are made available to the public or placed in commercial use).

161. See *id.* § 6(a) (providing that databases remain subject to the act for 25 years after January 1 of the year following the earlier of the date on which the database is made available to the public or placed in commercial use).

162. See Database Directive, *supra* note 1, art. 10(3), O.J. L 77/20, at 26 (1996); WIPO Proposal, *supra* note 1, art. 8(3) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996); H.R. REP. NO. 3531, *supra* note 1, § 6(b).

163. One can argue that the Database Directive and the WIPO Proposal do not offer “renewal” options, but rather offer protection only for “new” databases because the same investment is required to extend protection as to obtain initial protection. See Database Directive, *supra* note 1, art. 10, O.J. L 77/20, at 26 (1996); WIPO Proposal, *supra* note 1, arts. 8(3), 10 WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

164. See H.R. REP. NO. 3531, *supra* note 1, §§ 6(b), 2 (defining “change of commercial significance” as “a change that a reasonable user of a database would regard as affecting the quality, quantity or value” of the database contents as a whole).

on facts or information,¹⁶⁵ and provides that all other laws regarding databases or their contents—chief among them for purposes of this Article, competition law and laws in respect to access to public documents—shall remain unaffected by the respective regime.¹⁶⁶

Additionally, the Database Directive and the WIPO Proposal expressly permit Member States and Contracting Parties, respectively, to enact limited “fair-use” exceptions.¹⁶⁷ H.R. 3531 does not expressly provide fair-use exceptions, but does follow the Database Directive in permitting lawful database users to extract, use, and reuse insubstantial amounts of data for “any purposes whatsoever.”¹⁶⁸ The Database Directive strengthens this user protection by deeming contractual provisions to the contrary void,¹⁶⁹ but qualifies the protection by prohibiting users from performing acts that either conflict with normal exploitation of the database or unreasonably prejudice the database maker’s legitimate interests.¹⁷⁰

In contrast, H.R. 3531 permits parties to contract

165. However, in the case of sole-source data, the regimes could result in a *de facto* monopoly on facts. See *infra* notes 262-70 and accompanying text.

166. Database Directive, *supra* note 1, art. 13, O.J. L 77/20, at 27 (1996); H.R. REP. NO. 3531, *supra* note 1, § 9(c); WIPO Proposal, *supra* note 1, art. 12 WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

167. See Database Directive, *supra* note 1, art. 9, O.J. L 77/20, at 26 (1996); WIPO Proposal, *supra* note 1, art. 5(1) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996). In this respect, the WIPO Proposal would permit broader “fair-use” exceptions than the Database Directive. Compare WIPO Proposal, art. 5(1) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996) (permitting exceptions to and limitations on the extraction and use rights in special cases that do not conflict with the normal exploitation of the database and do not unreasonably prejudice the legitimate interests of the database right-holder) with Database Directive, *supra* note 1, art. 9, O.J. L 77/20, at 26 (1996) (providing three specific enumerated exceptions which may be authorized by Member States). The Database Directive’s exceptions are discussed more fully *infra* notes 294-321 and accompanying text.

168. H.R. REP. NO. 3531, *supra* note 1, § 5(a); Database Directive, *supra* note 1, art. 8(1), O.J. L 77/20, at 26 (1996).

169. Database Directive, *supra* note 1, art. 15, O.J. L 77/20, at 27 (1996).

170. *Id.* art. 8(1)-(2), O.J. L 77/20, at 26 (1996).

around this potential user protection.¹⁷¹ H.R. 3531 also severely limits “any purposes whatsoever”¹⁷² by prohibiting users from performing or procuring acts that singularly or cumulatively, adversely affect the actual or *potential* market for the database.¹⁷³ Considering this limitation and others noted above,¹⁷⁴ “one is hard pressed to imagine”¹⁷⁵ a legitimate purpose for which a user could extract or use even an insubstantial amount of data from a database protected by H.R. 3531 without the database maker’s authorization.

E. The Proposals’ Provisions Regarding Protection-Defeating Devices and Database Management Information

The Proposals prohibit the importation, manufacture, or distribution of devices whose primary purpose or effect is to defeat or circumvent self-protection measures¹⁷⁶ taken by database makers to prevent unauthorized extractions and utilizations.¹⁷⁷ Violation of this prohibition triggers “appropriate and effective remedies”¹⁷⁸ under the WIPO Proposal, and triggers a detailed set of civil remedies under H.R. 3531.¹⁷⁹

In addition, H.R. 3531 offers protection to database makers who mark their products with database management in-

171. See H.R. REP. NO. 3531, *supra* note 1, § 9(b) (permitting parties to freely contract with regard to databases and their contents).

172. See *supra* note 168.

173. H.R. REP. NO. 3531, *supra* note 1, § 4; see also *supra* notes 108-45 and accompanying notes (discussing the scope of protection).

174. See *supra* notes 108-45 and accompanying notes (discussing the scope of protection).

175. See Reichman & Samuelson, *supra* note 4, at 100.

176. Such self-protection measures might include encryption or password-protection systems.

177. WIPO Proposal, *supra* note 1, art. 10 WIPO Doc. CRNR/DC/6 (Aug. 30, 1996); H.R. REP. NO. 3531, *supra* note 1, § 10. The Database Directive does not address protection-defeating devices.

178. WIPO Proposal, *supra* note 1, art. 10(2) WIPO Doc. CRNR/DC/6 (Aug. 30, 1996).

179. These are the same remedies triggered for violation of the extraction and use rights. See *supra* note 134.

formation.¹⁸⁰ Knowingly providing false database management information, or knowingly altering or removing database management information without authority of the database maker, triggers both civil remedies and severe criminal penalties.¹⁸¹

III. MAKING THE PARADIGMATIC SHIFT: LINKING INCENTIVES TO PRODUCTION COSTS

To explain the implications of the Database Directive's *sui generis* regime, this part¹⁸² analyzes the Database Directive in light of applicable EC law, using the factual background of a recent United States case, *ProCD, Inc. v. Zeidenberg*.¹⁸³ This part also examines the balance the Database Directive strikes in the EC between the public's need for information access and the database maker's need for production incentives. Finally, this part responds to criticisms and concerns voiced by commentators.¹⁸⁴

Seeking to correct the imbalance of investment between the EC and the world, and between EC members in database production,¹⁸⁵ the Database Directive seeks to harmonize existing European copyright law¹⁸⁶ while simultaneously erecting a renewable, potentially perpetual, fifteen-year toll

180. H.R. REP. NO. 3531, *supra* note 1, § 11.

181. *Id.* §§ 11, 13 (violation of § 11 with intent to defraud can be punished by fine of up to \$500,000 or five years' imprisonment, or both). Neither the Database Directive nor the WIPO Proposal explicitly address database management information.

182. Unless stated otherwise, this part addresses only the Database Directive, not the Proposals. So the reader will not have to refer back to Part II and wrest information, applicable only to the Database Directive, from the Proposals, some information previously discussed is repeated in this part.

183. 908 F. Supp. 640 (W.D. Wis. 1996), *rev'd*, 86 F. 3d 1447 (7th Cir. 1996).

184. See *supra* notes 21-23 and accompanying text.

185. See *supra* note 11; see also Hugh C. Hansen, *International Copyright: An Unorthodox Analysis*, 29 VAND. J. TRANSNAT'L L. 579, 581 (1996) (explaining that one purpose of the Directives is to improve European competitiveness).

186. But see *supra* note 5 (explaining that the Directive permits derogation for less exacting regimes).

fence¹⁸⁷ that prohibits unauthorized extraction and reutilization¹⁸⁸ of the whole or a substantial part¹⁸⁹ of electronic and nonelectronic databases.¹⁹⁰ Available¹⁹¹ to database makers

187. The *sui generis* regime creates a fence, rather than a wall, because the regime permits some leakage (e.g., it permits insubstantial extractions and permits Member States to enact 'quasi-fair use' exceptions). Database Directive, *supra* note 1, arts. 7-9, O.J. L 77/20, at 25-26 (1996). Theoretically, the 15-year fence can be extended perpetually; however, entitlement to another 15-year fence requires the same showing required for initial protection: a substantial new investment. *Id.* art. 10(3), O.J. L 77/20, at 26 (1996). As noted above in Part II, the initial term of protection under the Database Directive could approximate 30 years if the database maker withholds the database for almost 15 years before initial release to the public.

188. Extraction is "the permanent or temporary transfer of all or a substantial part of the contents of a database to another medium by any means or in any form." Database Directive, *supra* note 1, art. 7(2)(a), O.J. L 77/20, at 26 (1996). Reutilization is "any form of making available to the public all or a substantial part of the contents of a database by the distribution of copies, by renting, by on-line or other forms of transmission." *Id.* art. 7(2)(b), O.J. L 77/20, at 26 (1996).

189. "Substantial part" may be evaluated quantitatively or qualitatively. Database Directive, *supra* note 1, art. 7(1), O.J. L 77/20, at 25 (1996). Though neither measure is defined by the directive, a lawful user "may not perform acts which conflict with normal exploitation of the database or unreasonably prejudice the legitimate interests" of the database maker. *Id.* art. 8(2), O.J. L 77/20, at 26 (1996); *see also* Gaster, *supra* note 128, at 4 (explaining that the Commission deliberately left the task of defining "substantial part" to the European Court of Justice); Rosler, *supra* note 11, at 120 (noting that many industry associations lobbied for actual percentage levels to determine infringement).

190. Database Directive, *supra* note 1, art. 1(1), O.J. L 77/20, at 24 (1996). The Initial Proposal, *supra* note 11, and the Amended Proposal, *supra* note 24, covered only electronic databases. The Council extended the scope of the Database Directive to nonelectronic databases because it obviated the need to draw a distinction between electronic and nonelectronic databases; because the Council deemed it inappropriate for a database distributed in both electronic and nonelectronic forms to receive different levels of protection; and because no such distinction is drawn in other international agreements. *See* Common Position, *supra* note 150, Statement of the Council's Reasons 8, O.J. C 288/02, at 24 (1995). Another need for the extension, although not noted in the Database Directive, is that today's high speed scanners and optical character recognition software make electronic conversion of nonelectronic databases almost as easy as electronic conversion of electronic databases. *See* Samuelson, *supra* note 11, at 3-4.

191. EC Member States must bring into force laws, regulations, and administrative provisions necessary to comply with the Database Directive before January 1, 1998. Database Directive, *supra* note 1, art. 16(1), O.J. L 77/20, at 27 (1996). In addition, Norway, Iceland, Poland, and Turkey must implement the Database Directive in accordance with their bilateral agreements. *See* Powell, *supra* note 11, at 1.

in Member States¹⁹² who can show a substantial investment¹⁹³ in obtaining, verifying, or presenting the underlying data,¹⁹⁴ the toll fence protects the commercial interests of database makers while attempting to accommodate the public's interests.

The Database Directive accommodates the public's interests by allowing insubstantial extractions from, and reuse of, the contents of databases made publicly available;¹⁹⁵ by deeming public lending not an act of extraction or reutilization;¹⁹⁶ by permitting Member States to enact "fair use" exceptions;¹⁹⁷ and by extinguishing the database maker's right to control resale after the first sale.¹⁹⁸ Additionally, although the Database Directive does not mandate compulsory li-

192. See *supra* note 191.

193. Substantial investment in data collection can be measured qualitatively or quantitatively. Database Directive, *supra* note 1, art. 7(1), O.J. L 77/20, at 25 (1996). Although the Database Directive indicates that compilation of several recordings of musical performances on a compact disc is not a substantial enough investment to be eligible for *sui generis* protection, *id.* recital 19, O.J. L 77/20, at 21 (1996), it fails to indicate the minimum level of investment required for such protection.

194. Database Directive, *supra* note 1, art. 7(1), O.J. L 77/20, at 25 (1996), recital 40, O.J. L 77/20, at 22 (1996). Obtaining/verifying data are self-explanatory concepts that apply equally to both electronic and nonelectronic databases. Presenting data is similarly self-explanatory in the context of nonelectronic databases; however, the concept of "presentation" in the context of electronic databases is generally inapplicable because users usually determine how such data is presented. See Ginsburg, *supra* note 6; Denicola, *supra* note 12, at 531. Obtaining, verifying, and presenting data will be collectively referred to hereinafter as "data collection."

195. Unless repeated and systematic insubstantial extractions unreasonably prejudice the database maker's legitimate interests. Database Directive, *supra* note 1, art. 8, O.J. L 77/20, at 26 (1996); see also *id.* art. 15, O.J. L 77/20, at 27 (1996) (making contracts to the contrary void).

196. *Id.* art. 7(2)(b), O.J. L 77/20, at 26 (1996).

197. See *id.* art. 9, O.J. L 77/20, at 26 (1996) (giving Member States the option to provide lawful users of publicly-available databases the right to privately reproduce nonelectronic databases; the right to use for noncommercial teaching/scientific uses; and the right to use for governmental security, administrative, or judicial purposes).

198. *Id.* art. 7(2)(b), O.J. L 77/20, at 26 (1996).

censes,¹⁹⁹ Member States can theoretically compel them when in the public's interest,²⁰⁰ and, realistically, European courts seem ready to vindicate the public's interest in competition when information producers abuse their dominant position.²⁰¹ Finally, the Database Directive contemplates the

199. Previous proposals mandated compulsory licenses on "fair and nondiscriminatory terms" in the case of sole-source data. Sole-source data are data that cannot be "independently created, collected or obtained from any other source." See Initial Proposal, *supra* note 11, art. 8, O.J. C 156/03, at 9 (1992); Amended Proposal, *supra* note 24, art. 11, O.J. C 308/01, at 13-14 (1993).

200. Database Directive, *supra* note 1, art. 13, O.J. L 77/20, at 27 (1996) ("This directive shall be without prejudice to . . . laws on restrictive practices and unfair competition . . .").

201. See, e.g., *Radio Telefis Eireann v. Commission*, Case 69/89, [1991] E.C.R. 485, 4 C.M.L.R. 586 (Ct. First Instance); *British Broadcasting Corp. v. Commission*, Case 70/89, [1991] E.C.R. 535, 4 C.M.L.R. 669 (Ct. First Instance); *Independent Television Publications Ltd. v. Commission*, Case 76/89, [1991] E.C.R. 575, 4 C.M.L.R. 775 (Ct. First Instance). In *Magill*, *Magill TV Guide Ltd. ("Magill")* attempted to publish a comprehensive television program guide based upon weekly listings published in separate program guides by British and Irish broadcasters (no comprehensive listing was available to viewers in Ireland). Joined Cases, 241/91 & 242/91, [1995] E.C.R. 743, 812, ¶ 10. Availing themselves of the copyright protection afforded listings in Ireland and Great Britain, the broadcasters sought and obtained an injunction against *Magill*, who had already lodged a complaint with the European Commission. *Id.* at 812, ¶¶ 10-11. The Commission found that the broadcasters had abused a dominant position and ordered the broadcasters to supply their weekly listings to parties requesting them for a reasonable rate, effectively forcing a compulsory license. *Id.* at 812-13, ¶¶ 12-13. The European Court of Justice upheld the compulsory licensing order, finding that there was consumer demand for the comprehensive guide for which there was no available substitute, and held that the broadcasters' refusal to supply the data prevented the appearance of a new product and the broadcasters' had therefore abused a dominant position in violation of Article 86 of the Treaty Establishing the European Economic Community, Mar. 25, 1957, 298 U.N.T.S. 11, 1973 Gr. Brit. T.S. No. 1 (Cmd. 5179-II) [hereinafter EEC Treaty]. *Radio Telefis Eireann*, [1995] E.C.R. at 824, ¶¶ 53-54. Although Article 86 is triggered only when abuse of a dominant position has the potential to affect trade between Member States, David Harbord, *Barriers to Entry and Exit in European Competition Policy*, 14 INT'L REV. L. & ECON. 411, 421 (1994), it is not necessary that the conduct in question have an actual, substantial effect on trade; rather, it is only necessary the conduct is capable of having such an effect. *Radio Telefis Eireann*, [1995] E.C.R. at 828, ¶ 69. Moreover, competition policy in the EC is converging. See generally LEAH DAVISON ET AL., *THE EUROPEAN COMPETITIVE MARKET* (1995) (explaining that national competition policy is beginning to reflect supranational competition policy). Furthermore, as markets within the Community become more European in character, it will be increasingly difficult to prove that a par-

public's interest in free competition by mandating a triennial review of the *sui generis* regime to determine whether anti-competitive effects require the establishment of a compulsory licensing scheme.²⁰²

Yet, despite these seemingly broad protections of the public interest, many commentators, echoing the monocular vision of *Feist Publications v. Rural Telephone Service*,²⁰³ have expressed serious concerns about the negative effects of the Database Directive on the "free" flow of information,²⁰⁴ while others have argued that the Database Directive is anti-competitive and will retard long-term growth in the database industry.²⁰⁵ To determine whether these concerns are

ticular activity will have only a purely national effect. *Id.* Thus, plaintiffs should find it increasingly easier to use Articles 85 and 86 of the EEC Treaty to enjoin anticompetitive behavior within the European Economic Community ("EEC"); see generally Corbet, *supra*, note 29 (analyzing the interaction between EC competition law and intellectual property law).

202. Database Directive, *supra* note 1, art. 16(3), O.J. L 77/20, at 27 (1996) ("[E]very three years . . . the Commission . . . shall examine in particular the application of the *sui generis* right, . . . especially whether the application of this right has led to abuse of a dominant position or other interference with free competition which would justify . . . the establishment of non-voluntary licensing arrangements.").

203. See *supra* note 12. Feist's myopic focus on the inability of facts to be original (an epistemologically erroneous view, see *supra* note 37), and almost singular concern over harming the public by creating a monopoly in public domain materials, "grossly neglect[ed] copyright's incentive role." See Ginsburg, *supra* note 6, at 350.

204. See Rosler, *supra* note 11, at 146 (the Database Directive's most dangerous aspect is "its potential to stifle access to information"); Reichman & Samuelson, *supra* note 4, at 108-17, 123-24 (arguing that, by impeding the flow of information, the Database Directive and Proposals will put basic science and other public interest groups at risk); Academy Letter, *supra* note 23, at 1-2 (arguing that the pending WIPO Proposal "would seriously undermine the ability of researchers and educators to access and use scientific data, and would have a deleterious long-term impact on our nation's research capabilities"); GLOBAL ACCESS, *supra* note 4, at 35 (summarizing the potential effects of an "overly protective database regime").

205. See Rosler, *supra* note 11, at 108 (arguing that the Database Directive will fail both as an international trade mechanism and as an economic policy); see also Von Simson, *supra* note 23, at 766-68 (arguing that because the *sui generis* regime will reward lower-level economic behavior (data collection), compilers will have little incentive to invest higher-level creative activity that result in user-friendly features). However, this view ignores the pressure to provide user-

well-founded, it is useful to apply the Database Directive's protections, and other offsetting ameliorative measures available to members of the EC, to a set of facts.

A. *Vindicating the Competitive Ethos in Nonproprietary Data: Forcing Free Riders to Become Fair Followers*

Aimed at increasing European market share in the database market,²⁰⁶ the transferable *sui generis* rights²⁰⁷ created by the Database Directive raise a legal barrier to misappropriation²⁰⁸ of database makers' investment in data collection.²⁰⁹ Assuming a database maker can prove a substantial enough investment²¹⁰ to secure protection, the *sui generis* regime affords the maker two complementary quasi-property

friendly features inherent in the competitive market. See *Digital Equip.*, 73 F.3d at 762 ("[P]igheaded refusal to satisfy customers' preferences . . . leads to ruin as rivals step in to take the business.") In addition, it ignores the fact that higher-level creative activity will still enjoy copyright protection under the Database Directive. See generally Database Directive, *supra* note 1, arts. 3-6, O.J. L 77/20, at 25 (1996).

206. See *supra* note 11. The lagging European market can be explained in part by fragmented nature of the European market and the economies of scale achieved in the larger United States market. See Melnik, *supra* note 2, at 60; see also Rosler, *supra* note 11, at 109-10 (noting that the United States retains many advantages in the database market, including a monolingual market, and economies of scale built upon years of industry experience and consolidation).

207. The *sui generis* rights may be transferred, assigned or granted under contractual license. Database Directive, *supra* note 1, art. 7(3), O.J. L 77/20, at 26 (1996).

208. Database Directive, *supra* note 1, recital 39, O.J. L 77/20, at 22 (1996) (providing that "this Directive seeks to safeguard the positions of makers of databases against misappropriation" of financial and human capital investment in obtaining, verifying or presenting data); cf. *International News Serv. v. Associated Press*, 248 U.S. 215 (1918) (recognizing misappropriation); see generally Wendy J. Gordon, *On Owning Information: Intellectual Property and the Restitutory Impulse*, 78 VA. L. REV. 149 (1992).

209. "Data collection" is defined *supra* note 194.

210. See Database Directive, *supra* note 1, recitals 53-54, O.J. L 77/20, at 24 (1996) (burden on maker to prove substantial enough investment to secure protection). Unfortunately, like many key terms of the Database Directive, the substantial investment criterion is ill-defined. See *supra* note 193. Thus, the burden a database maker must carry to secure protection under the *sui generis* regime will remain uncertain until interpreted by the European courts.

rights:²¹¹ the right to prevent extraction of the contents of the database and the right to prevent reutilization of the contents of the database.²¹² Of capital importance in assessing these rights is understanding, first, their linkage to the contents of the database, and second, that neither extends copy-right protection to the underlying facts and data.²¹³

Rather than attempting to assess these rights in a theoretical vacuum, the following assessment is made in light of the factual background of *ProCD v. Zeidenberg*,²¹⁴ a case that underscores the need for a *sui generis* regime to protect compilers from the malcompetitive behavior of free riders and information Samaritans, and provides a set of facts tailor-made for exploring the application and outer limits of the Database Directive's *sui generis* regime.

1. The Facts of *ProCD v. Zeidenberg*

In creating a comprehensive, nationwide electronic phone directory, the database maker in *Zeidenberg* spent ap-

211. See Gordon, *supra* note 115, at 1546. The *sui generis* regime does not create *de jure* property rights in the underlying facts, although in the case of sole-source data, which cannot be independently generated or acquired from another source, it may create *de facto* property rights in the underlying facts. For this reason and because of the potential exceptions and limits on the *sui generis* rights, these rights lie somewhere between the exclusive property right in expression granted by copyright and the protection afforded noncopyrightable facts by *INS*. See *INS*, 248 U.S. at 236. With regard to nonproprietary data, the *sui generis* regime functions more like permanent, portable trade secret protection; that is, the second comer is presented with a two options: obtain a license from the database maker to access its contents or obtain its contents by "proper means." Cf. Reichman, *supra* note 10, at 2438-40.

212. "Extraction" is defined *supra* at note 188; "reutilization" is defined *supra* at notes 121 and 188; see Database Directive, *supra* note 1, art. 7(1), O.J. L 77/20, at 25 (1996).

213. *Id.* recital 45, O.J. L 77/20, at 23 (1996). As a result, that which is in the public domain, remains in the public domain. However, this postulation breaks down in the case of sole-source data. Moreover, the incentive it creates to privatize data raises concerns about the flow of information that must be addressed by ameliorative measures. These concerns are discussed *infra* at text accompanying notes 262-322.

214. See *supra* note 183.

proximately \$10 million²¹⁵ compiling more than ninety-five million residential and commercial listings from approximately 3,000 telephone directories.²¹⁶ After purchasing the listings on compact disc for less than \$200, the free rider electronically extracted and recompiled twenty million listings from the maker's database into his own database, and made "his" listings freely²¹⁷ available over the Internet.²¹⁸ On cross motions for summary judgment, the district court, while noting the database maker's argument that the free rider's conduct was unfair and commercially destructive had "substantial equitable appeal," rejected the maker's federal copyright claim, as well as the maker's state law claims of breach of contract, misappropriation, and unfair competition.²¹⁹ Thus, the district court's holding left the free rider, and others like him, free to purchase the databases of others, to ignore the shrink-wrap license, to extract electronically the database's contents at a fraction of the makers' effort, and then to sell that content in a different wrapper for a lower price,²²⁰ or to

215. *Judge Freezes Student's Internet Service*, B. GLOBE, Sept. 24, 1995, at 41.

216. *See Zeidenberg*, 908 F. Supp. at 644.

217. Although the free rider charged for advertising in this case, the Database Directive would prevent all free riders, whether commercially motivated or not, from engaging in such commercially destructive (incentive-reducing) behavior. *See Database Directive*, *supra* note 1, arts. 8-9, O.J. L 77/20, at 26 (1996).

218. *See Zeidenberg*, 908 F. Supp. at 646.

219. *See id.* at 643. The district court refused to treat the shrink-wrap license as a licensing agreement. *Id.* at 650-51. Instead, the court held the agreement unenforceable under the Uniform Commercial Code for lack of assent (the free rider was a graduate student who disregarded screen warnings that use of the product was subject to the license agreement). *Id.* at 655. Although the district court's holding with regard to the federal copyright claim was a logical application of *Feist*, the court's rejection of the shrink-wrap license was analytically unsound. G. M. Hunsucker, Raising a Toll Fence to Protect the "Noncreative" Labors of Database Makers: The European Database Directive 15 n.43 (May 1, 1996) (unpublished manuscript, on file with Professor J. H. Reichman, Vanderbilt University School of Law). Accordingly, the Seventh Circuit reversed on appeal. *See supra* note 25; *see also* *National Basketball Ass'n v. Motorola, Inc.*, 1997 WL 34001, at *34010 (2d Cir. 1997) (approving the Seventh Circuit's analysis of the state contract law claim).

220. *See supra* notes 5, 73 and accompanying text; *see also* Reichman, *supra* note 10, at 2452-53.

provide that content to others free of charge.²²¹

2. Protecting the Database Maker's Investment from Free Riders and Information Samaritans

In the illustrative case, the free rider electronically extracted twenty million of the ninety-five million telephone listings contained in the maker's database,²²² downloaded them to his hard drive, and then recompiled the listings into his own database.²²³ Under the *sui generis* regime created by the Database Directive, the free rider's first act violated the database maker's right to prevent extraction because he extracted²²⁴ the contents of the database and because that extraction was substantial.²²⁵ Similarly, when the free rider later made "his" database accessible via his Internet web page, he violated the database maker's right to prevent re-utilization because he made a substantial part of the contents of the maker's database publicly available.²²⁶

221. See *supra* note 5.

222. *Court Decision Goes Against Pro CD*, ELECTRONIC MARKETPLACE REP., Jan. 23, 1996, available in Westlaw, Allnewsplus File. To put this into perspective, if one amortizes the data collection costs to the database maker over the all 95 million listings, the free rider saved over two million dollars in data collection costs; or, to put it another way, the free rider appropriated over two million dollars of the maker's investment in data collection.

223. See *Zeidenberg*, 908 F. Supp. at 645-46.

224. The free rider's first act would have been an extraction whether he downloaded the data to his hard drive, printer, or any other medium. See *supra* note 188 (defining "extraction"). Moreover, even if the free rider had accomplished the transfer by manually keying the data in, and had thus expended considerably more effort, it would still constitute an unauthorized extraction under the Database Directive. See *supra* note 188.

225. Like many of the operative terms in the Database Directive, what precisely constitutes a "substantial part" of the contents of the database is not defined. Apparently, the Commission intended to leave the definitional task to the European courts. See Gaster, *supra* note 128, at 4. However, it would defy common sense, as well as the policy to protect database makers from the misappropriation of their data collection efforts, to find that the free rider, who extracted 20 million of 95 million telephone listings contained in a maker's database did not extract a substantial part of the contents of the database.

226. *Id.*

Even if a court found that the free rider did not extract or reuse a substantial part of the database contents, the database maker could fall back on a second prong of protection—the right to prevent extraction or reutilization of insubstantial parts of the database—when those repeated insubstantial extractions or reutilizations unreasonably prejudice the maker's rights.²²⁷ Here, the free rider's database permitted extraction of 1,000 listings per search, and prior to the law suit was being accessed via the Internet approximately 20,000 times per day.²²⁸

With the explosive growth of Internet access providers,²²⁹ information-rich Web pages,²³⁰ and user-friendly interfaces that make "surfing the Net" easy even for neophytes,²³¹ it seems reasonable to conclude that many users would forego the \$200 price tag of the database maker's product in favor of free access to the free rider's product. Thus, by making the contents of the database maker's product freely available to the public, the free rider's actions unreasonably prejudiced the maker's rights and interfered with the maker's normal exploitation of the database. As a result, the theoretical EC database maker would be entitled to appropriate remedies.²³²

227. Although database makers cannot prevent lawful users from extracting/reutilizing insubstantial parts of the publicly-available databases, Database Directive, *supra* note 1, art. 8(1), O.J. L 77/20, at 26 (1996), lawful users must refrain from performing acts that unreasonably prejudice the legitimate interests of the database maker. *Id.* art. 8(2), O.J. L 77/20, at 26 (1996); *see also id.* art. 15, O.J. L 77/20, at 27 (1996) (making contractual provisions contrary to article 8 null and void).

228. *See Zeidenberg*, 908 F. Supp. at 646.

229. *Cf. id.* (noting that lawsuits concerning ownership of data distributed via the Internet is natural given the explosive growth of the Internet) (citing Jane C. Ginsburg, *Putting Cars on the "Information SuperHighway": Authors, Exploiters, and Copyright in Cyberspace*, 95 COLUM. L. REV. 1466 (1995)).

230. *See Cade Metz*, *The 100 Top Web Sites*, PC MAG., Feb. 6, 1996, at 100.

231. *See Rick Ayre & Thomas Mace*, *Just Browsing*, PC MAG., Mar. 12, 1996, at 100.

232. *See Database Directive*, *supra* note 1, art. 12, O.J. L 77/20, at 27 (1996) (requiring Member States to provide appropriate remedies for infringements of

Thus, the Database Directive not only protects database makers from free riders who seek to gain a competitive advantage by extracting the contents of the maker's database (and thereby avoid the costs of data collection),²³³ but also protects database makers from the market-destructive antics of information Samaritans.²³⁴ In this respect, the Directive fills two gaps left by existing legal regimes.²³⁵

Moreover, long-term production incentives for database production are more sustainable under the Directive's *sui generis* regime because the existence and degree of protection are linked to investment,²³⁶ rather than the superficial form of the final product hailed the linchpin of protection by copyright law.²³⁷ Furthermore, by jettisoning the paradoxical linchpins of arrangement and selection²³⁸ required for database protection under most copyright regimes,²³⁹ the Di-

the rights provided by the Database Directive).

233. See *supra* note 99; see also *National Basketball Ass'n*, 1997 WL 34001, at *34013-15 (rejecting the NBA's claim that Motorola was free-riding by transmitting NBA game statistics almost contemporaneously, because Motorola was not free riding, but rather independently collecting, assembling, and transmitting the data). In *NBA v. Motorola*, however, the Second Circuit hinted that its analysis might differ if Motorola were collecting the facts (free riding) via a NBA data-feed. *Id.* at *34013-14.

234. See *supra* note 5.

235. See *supra* notes 57-101 and accompanying text.

236. See Denicola, *supra* note 12, at 530 (sufficient production incentives cannot be maintained without linking the existence and degree of protection to the total production costs). Although one can doubtless provide examples of databases that would be produced with far less than 15 years of protection provided by the Database Directive, even copyright and the law of trade secrets produce questionable results on their margins. Can one justify protecting a copyrighted work for an additional 74 years after it has netted the creator several million dollars in its first year? Eternal trade secret protection for a consumable item proven to cause physiological damage, which has no redeeming characteristics?

237. *Id.*

238. The linchpins are paradoxical because although both requirements purport to protect the public's interest in public domain information, they also work against the public's interest in promoting knowledge in several ways. See *supra* notes 65-71 and accompanying text; see generally Ginsburg, *supra* note 6, at 344-46; Reichman, *supra* note 10, at 2491.

239. See Berne Convention, *supra* note 8, art. 2(5), 828 U.N.T.S. at 221; 17 U.S.C.A. §§ 101, 103; *Feist Publications, Inc. v. Rural Telephone Serv. Co.*, 499

rective's *sui generis* regime avoids the perverse incentives that reduce the accessibility and usability of databases²⁴⁰ and ultimately work against the public's interest in promoting knowledge.²⁴¹

Finally, this act of legal candor²⁴² in recognizing that the compiler's primary contribution to the promotion of knowledge is through investment in data collection,²⁴³ rather than data arrangement or selection, leaves courts free to focus on protecting the commercial interests of the database maker from parasitic competitors and other misappropriators who reduce incentives to produce commercially-valuable databases.

3. Protecting the Public's Interest in Competition

Protecting the database maker's commercial interests, however, does not mean that the misappropriation fence raised by the Database Directive completely insulates the database maker from all competition.²⁴⁴ On the contrary, because the fence prohibits only extraction and/or reutilization of the contents of databases, and does not extend copyright protection to mere facts or data,²⁴⁵ the fence merely proscribes one method of data collection;²⁴⁶ it does not empower database makers to remove data from the public domain.²⁴⁷

U.S. 340, 356 (1991); Database Directive, *supra* note 1, recitals 15-16, O.J. L 77/20, at 21, art. 3(1), O.J. L 77/20, at 25 (1996).

240. See *supra* notes 65-68 and accompanying text.

241. See *supra* notes 38, 65-71 and accompanying text.

242. Reichman & Samuelson, *supra* note 4, at 154 ("[T]he European Commission's frank acknowledgment that the [Database Directive's *sui generis* regime] would protect investment as such amounts to a refreshing act of legal candor.").

243. See Denicola, *supra* note 12, at 530.

244. But see Reichman & Samuelson, *supra* note 4, at 90 (arguing that, under the Database Directive, the database maker obtains protection exceeded only by the protection afforded patent holders).

245. See Database Directive, *supra* note 1, recital 45, O.J. L 77/20, at 23 (1996).

246. See Denicola, *supra* note 12, at 541.

247. See *supra* note 213.

It follows necessarily that fair followers²⁴⁸ remain free to create identical databases, so long as they do not create those databases by appropriating the contents from a protected database.²⁴⁹ Thus, under the Database Directive, the free-rider-turned-fair-follower can go forth, collect the same data, and compile and market an identical database or any variant thereof,²⁵⁰ without infringing the rights provided by the *sui generis* regime to the database maker.²⁵¹

Alternatively, the fair follower can seek a license from the database maker.²⁵² Although the Database Directive does not mandate licensing,²⁵³ the database maker risks price competition from more efficient fair followers if the maker

248. See Reichman, *supra* note 30.

249. This statement assumes the contents of, or the database itself, do not enjoy copyright protection. Professor Litman's observation that this result is functionally indistinguishable from granting copyright protection to the underlying facts, Litman, *supra* note 37, at 1016 & n.289, holds true in the case of proprietary data, but not in the case of nonproprietary data. To illustrate, assume a copyright holder in a literary work, by definition expression not existing in the public domain, proves that a second comer who produced an identical work had access to the first work. Notwithstanding incantations that independent creation is a perfect defense in copyright, see, e.g., *Sheldon v. Metro-Goldwyn Pictures Corp.*, 81 F.2d 49, 54 (2d Cir.), *cert. denied*, 298 U.S. 669 (1936), it seems incredulous to suggest that the second comer could overcome the presumption of copying and the inherent skepticism of judges and juries. Now assume a similar situation for a database of nonproprietary facts protected under the *sui generis* regime. Here, the second comer can more easily produce objective evidence demonstrating the data collection costs incurred in gathering public domain materials. As a practical matter, the second comer would have a lower burden of production under the *sui generis* regime.

250. This statement assumes the data are freely accessible and not otherwise protected. Using the *Zeidenberg* facts as an example, if the data were protected, the database maker would be in the same position *vis-à-vis* the compilers of the 3,000 directories as the free rider was to the maker. The irony of the database maker's suing the free rider, after cloaking himself with the constitutional protection afforded free riders by *Feist* (the database maker copied unprotected data from 3,000 directories) was perhaps a, if not the, critical factor in the district court's decision to deny relief. See *Zeidenberg*, 908 F. Supp. at 658 (it is ironic that after obtaining the benefits of copyright, the plaintiff seeks to prevent others from obtaining those same benefits).

251. See *supra* notes 13, 56.

252. See *supra* notes 199-202 and accompanying text.

253. See *infra* note 273.

tries to extract too high a price for the license.²⁵⁴

Similarly, because data are fungible, the database maker who overprices his product also risks price competition from more efficient fair followers who independently create identical databases.²⁵⁵ Consequently, competitive pressures in the nonproprietary database market should provide the database maker with an incentive to achieve greater efficiency in data collection: the more efficient the maker is in collecting the data, the harder it will be for fair followers to compete on a price basis.²⁵⁶

Thus, unlike other intellectual property regimes, such as copyright and patent, which use a winner-take-all approach to overcome risk aversion,²⁵⁷ the *sui generis* regime, at least with respect to nonproprietary data, serves the same “pro-competitive functions as does the law of trade secrets”²⁵⁸ without requiring actual secrecy.²⁵⁹ Therefore, with respect to nonproprietary data,²⁶⁰ the combination of market-imposed price limits and market inducements to achieve maximum efficiency in data collection should redound to the benefit of the information-using public in the form of more

254. Cf. *National Basketball Ass’n*, 1997 WL 34001, at *34014 (explaining that the data collector producing the cheaper or otherwise superior product will prevail in the marketplace).

255. *Id.*

256. Other factors affect the fair follower’s ability to compete on a price basis. For example, data which is extremely difficult to collect may give the first database maker sufficient time to gain significant market share, which in turn may act as a barrier to entry. See *supra* note 100. In addition, data accuracy is also a consideration that may affect an unknown fair follower’s ability to compete because data users may be unwilling to gamble on unknown data compilers when accuracy is critical. See Roger Elliot, *Chairman’s Report* (visited May 11, 1997) <<http://www.grainger.uiuc.edu/icsu/confchmn.htm>> (noting need for strict peer review of scientific data submitted for publication in electronic journals); cf. Perritt, *supra* note 4, at 279.

257. See Reichman, *supra* note 4, at 486.

258. *Zeidenberg*, 86 F.3d at 1455 (citing *Rockwell Graphic Sys. v. DEV Indus.*, 925 F.2d 174, 180 (7th Cir. 1991)); cf. Reichman, *supra* note 10, at 2439-40.

259. See *supra* note 57.

260. See *supra* note 24.

comprehensive and less costly databases.²⁶¹

B. *Criticisms of the Database Directive Regarding Sole-Source Data: Is the Sky Falling?*

June 13, 2013:

Yesterday scientists discovered a method which stimulates the body's immune system to a level sufficient to kill the AIDS virus Unfortunately the scientists have embodied these data within a database, have set the price of each treatment at one million dollars, and have refused to license the critical data.

—Chicken Little, *The Sky Is Falling*, CASSANDRA WEEKLY, at 13.

Although perhaps a bit extreme, the hyperbole makes the point: extending the *sui generis* extraction and reutilization rights to database makers who are also data sources, or who are the exclusive licensee of data sources, creates the risk of data privatization,²⁶² with its attendant risk of monopolistic pricing, for potentially perpetual fifteen-year renewable periods,²⁶³ rather than just legitimately protecting the investments of database makers.²⁶⁴ For that reason and several others, it initially appears that this Article's working hypothesis, that the *sui generis* regime vindicates the competitive ethos, breaks down in the case of sole-source data.²⁶⁵

First, the implicit market limits that flow from the possi-

261. *But see supra* notes 204-05, *infra* note 362 (citing commentators who argue that regime will result in data monopolies, which will, in turn, stifle access to information).

262. *See* Reichman & Samuelson, *supra* note 4, at 84-85 (arguing that the Database Directive would eventually abolish public domain data).

263. *See supra* note 187 (noting that a "renewal" requires a substantial new investment).

264. Even the Directive's harshest critics agree that database makers have legitimate interests in a new form of legal protection. *See* Reichman & Samuelson, *supra* note 4, at 55; GLOBAL ACCESS, *supra* note 4, at 24-25.

265. *See supra* notes 24, 198 (defining "sole-source data").

bility of fair followers being more efficient data collectors are reduced, and in limited circumstances eliminated, in the case of sole-source data because the fence created by the *sui generis* regime effectively enables the first database maker to control dissemination of the raw data.²⁶⁶ This power to control the dissemination of sole-source data enables the first database maker not only to charge monopolistic fees for access to the database, but also to charge monopolistic licensing fees, if the database maker chooses to license at all, to fair followers seeking to use the sole-source data in a competing or value-added product.²⁶⁷

Second, the *sui generis* regime creates an incentive to privatize data that in turn raises legitimate concerns over database makers' ability to control the dissemination of information.²⁶⁸ Because anyone can make a database, including those in charge of conducting basic scientific research, this incentive could spill over into academia and reduce the indirect subsidies now provided to private research and development.²⁶⁹ Although privatizing data might result in more short-term basic research, privatization of data as such could stifle innovation by diminishing long-term research and development, particularly if database makers secure exclusive licenses and effect a cartelization of data sources.²⁷⁰

The initial and amended versions of the Database Directive addressed these potential problems head-on by mandating compulsory licenses on fair and nondiscriminatory terms

266. See *supra* note 213.

267. See Reichman & Samuelson, *supra* note 4, at 117-19 (*sui generis* regime will impede competition in the value-added market).

268. See Rosler, *supra* note 11, at 141-42. Although the *sui generis* regimes raise potential First Amendment issues, see, e.g., Reichman & Samuelson, *supra* note 4, at 79, those issues are beyond the scope of this Article.

269. See Reichman, *supra* note 10, at 2498; see also *infra* note 356 (discussing spillover).

270. Cf. Reichman, *supra* note 10, at 2497-98. But see *infra* notes 373-85 and accompanying notes (discussing potential benefits to research and development).

in the case of sole-source data.²⁷¹ However, the Common Position²⁷² removed the compulsory licensing provision in favor of other ameliorative measures aimed at protecting the user.²⁷³ The next section examines these ameliorative measures in light of the criticisms regarding sole-source data noted above,²⁷⁴ to ascertain whether the Database Directive's *sui generis* regime is underprotective, overprotective, or perhaps somewhere between the two extremes.²⁷⁵

C. The Ameliorative Measures: Will They Protect the Public's Interest in Competition?

The Database Directive not only provides swords that

271. Initial Proposal, *supra* note 11, art. 8, O.J. C 156/03, at 9 (1992); Amended Proposal, *supra* note 24, art. 11, O.J. C 308/01, at 13-14 (1993).

272. See *supra* note 150.

273. According to the Council, the compulsory licensing provision was no longer needed in light of the narrower scope of the *sui generis* rights and the exceptions provided in article 9. Common Position, *supra* note 150, Statement of the Council's Reasons 15, O.J. C 288/02, at 26-27 (1995). Both justifications seem to contradict the terms of the Database Directive. First, although the *sui generis* rights, as positively stated in the Amended Proposal, extended to "part or all" of the database, see Amended Proposal, *supra* note 24, art. 10(1), O.J. C 308/01, at 13 (1993), the Database Directive still prohibits repeated and systematic extraction of insubstantial parts if that extraction conflicts with the normal exploitation of that database or unreasonably prejudices the maker's rights. See Database Directive, *supra* note 1, art. 7(3), O.J. L 77/20, at 26 (1996); see also *id.* art. 8(2), O.J. L 77/20, at 26 (1996) (prohibiting users from performing any act; e.g., tampering with the database, that conflicts with the normal exploitation of that database or unreasonably prejudices the maker's rights). Second, the "fair use" exceptions in article 9 are optional within the Member States. See *id.* art. 9, O.J. L 77/20, at 26 (1996). Nonetheless, the Council's citation to them as a reason for removing the compulsory license indicates its intent that the exceptions be passed. See Common Position, *supra* note 150, Statement of the Council's Reasons 15, O.J. C 288/02, at 26-27 (1995). Accordingly, even if a particular member state did not enact the exceptions, they would probably be significant factors in any appeal to the Commission regarding abuse of the *sui generis* rights. See *infra* notes 277-92 and accompanying text (discussing "swords").

274. See *supra* notes 262-70 and accompanying text.

275. For example, a solution that approximates pareto optimality. "Pareto optimality" refers to the point at which no change can be implemented that will make someone better off without making someone else worse off. See VISCUSI, *supra* note 38, at 74-75.

enable fair followers to protect the public's interest in competition, but also provides shields to users who are not seeking to compete, but are performing functions deemed sufficiently important to provide exceptions to the *sui generis* rights afforded database makers.²⁷⁶ While examining the swords provided by the Database Directive, to fully understand the potential swath fair followers can cut with these swords, one must simultaneously examine the arenas in which they can be drawn and the decision-makers who will determine whether these swords are required to protect the public's interest in competition in a given case.

1. The Swords: The European Economic Community Treaty and Competition Law

Once fully implemented, the Database Directive's *sui generis* regime will, like other laws passed pursuant to the European Economic Community ("EEC") Treaty,²⁷⁷ take precedence over national laws.²⁷⁸ However, the *sui generis* rights are expressly limited by both national and Community rules of competition.²⁷⁹ As a result, a fair follower aggrieved by the anticompetitive behavior of a database maker can file a complaint not only with the Commission of the European Communities ("Commission")²⁸⁰ if the anticompetitive behavior violates one of the EEC competition

276. See *infra* notes 294-318 and accompanying text.

277. Treaty Establishing the European Economic Community, Mar. 25, 1957, 298 U.N.T.S. 11, 1973 Gr. Brit. T.S. No. 1 (Cmd. 5179-II).

278. See Corbet, *supra* note 29, at 330.

279. See Database Directive, *supra* note 1, recital 47, O.J. L 77/20, at 23 (1996). The EC rules of competition are reported in Corbet, *supra* note 29, at note 84.

280. The Commission investigates and adjudicates complaints under Articles 85 and 86 that address the distortion of competition and the abuse of a dominant position. Corbet, *supra* note 29, at 332. The Commission's decision is appealable to the Court of First Instance of the European Communities, and questions of law are thereafter appealable to the Court of Justice of the European Communities. *Id.*; see also *Radio Telefis Eireann*, [1995] E.C.R. at 828, ¶¶ 67-68 (appeal to Court of Justice only on questions of law, not facts).

rules,²⁸¹ but can also file a complaint in a national forum based on violation of the EEC Treaty²⁸² or any national competition rule.²⁸³

Perhaps the most powerful sword a fair follower can wield is the one provided by Article 86 of the EEC Treaty ("Article 86"). Article 86 prohibits the abuse of a dominant position within the common market, or in a substantial part of the common market, that affects trade between Member States.²⁸⁴ Value-added competitors have effectively wielded the sword afforded by Article 86 to force compulsory licenses even when copyright law buttressed the dominant position.²⁸⁵

For example, in *Radio Telefis Eireann v. Commission* ("Magill"),²⁸⁶ the European Court of Justice upheld a compulsory licensing order forcing television broadcasters to supply their weekly program listings to a competitor who sought to produce a value-added product (a television program guide) not otherwise available on the market.²⁸⁷ If the European Court of Justice is willing to vindicate the public's interest in competition for television program guides so the

281. See Corbet, *supra* note 29, at 347. The EEC competition rules include articles 85-94 of the EEC Treaty, and other treaties. *Id.* at 348 n.84. Articles 85 and 86 of the EEC Treaty are by far the most important, *id.*, and are the only ones of concern in this Article.

282. Although national forums may apply EEC law, they must refer questions of EEC law to the European Court of Justice for an interlocutory and binding (in the case and as precedent) ruling. See Corbet, *supra* note 29, at 330-32.

283. In this regard, the Commission has noted the tendency of Member States to redraft their national rules consistent with EEC law. See DAVISON ET AL., *supra* note 201, at 46-47.

284. See EEC Treaty, *supra* note 201, art. 86, 298 U.N.T.S. 11, 1973 Gr. Brit. T.S. No. 1.

285. See *Radio Telefis Eireann*, [1995] E.C.R. at 823, ¶ 50 (noting that failure to supply information prevented new product from appearing on the market). As the *Magill* court explained, "it is . . . clear . . . that the exercise of an exclusive right by the proprietor may, in exceptional circumstances, involve abusive conduct." *Id.* (citing *Volvo AB v. Erik Veng (UK) Ltd.*, Case 238/87, [1988] E.C.R. 6211, [1988] 4 C.M.L.R. 122)).

286. Joined Cases, 241/91 & 242/91, [1995] E.C.R. 743; see *supra* note 136.

287. See *Radio Telefis Eireann*, [1995] E.C.R. at 837, ¶ 104, [1995].

public may “arrange [their] leisure activities . . . accordingly,”²⁸⁸ how much more willing will the Court be to vindicate that interest in areas vital to scientific and technical progress?

In addition, to attack database makers who secure exclusive licenses, or otherwise engage in collusive activity to thwart competition, fair followers can wield the sword provided by Article 85 of the EEC Treaty (“Article 85”).²⁸⁹ Taken together, Articles 85 and 86, and the “Excalibur-like” pro-competitive sword found in *Magill*,²⁹⁰ along with the increasing willingness of European firms to abandon anticompetitive practices when challenged by the Commission,²⁹¹ may be sufficient in and of themselves to protect the public’s interest in competition by forcing would-be data monopolizers to supply their data on reasonable terms.²⁹² Yet the Database Directive goes further by mandating a triennial review of the *sui generis* rights to determine whether the public’s interest in free competition requires additional protective measures, including additional swords such as compulsory licenses, or additional shields such as the ones described below.²⁹³

288. *Id.* at 795, ¶ 173.

289. Article 85 prohibits “all agreements between undertakings . . . and concerted practices” which may prevent, restrict, or distort competition within the common market. See EEC Treaty, *supra* note 201, art. 85, 298 U.N.T.S. 11, 1973 Gr. Brit. T.S. No. 1.

290. The swords available to fair followers in the EC are preserved by TRIPS. See Agreement on Trade-Related Aspects of Intellectual Property Rights, 33 I.L.M. 1197, in General Agreement on Tariffs and Trade: Multilateral Trade Negotiations Final Act Embodying the Results of the Uruguay Round of Trade Negotiations, Apr. 15, 1994, 33 I.L.M. 1125, Annex 1C, art. 40 (2) [hereinafter TRIPs]; see also Fox, *supra* note 29, at 485 (“TRIPs reserves to nations the right to control anticompetitive practices.”).

291. See DAVISON ET AL., *supra* note 201, at 46.

292. The Commission, whose proposals contained a compulsory licensing requirement, see the Initial and Amended proposals, *supra* notes 11, 24 will be available to the fair follower as an initial adjudicative body capable of compelling the license. See Corbet, *supra* note 29, at 322-23.

293. See Database Directive, *supra* note 1, art. 16(3), O.J. L 77/20, at 27 (1996). The drafters of the Database Directive intended that the same pro-competitive

2. Mandatory and Optional Shields to Protect the User

Unlike the swords afforded fair followers in the interests of competition, the protections discussed in this section purport to act as shields to protect the legitimate rights of users and others.²⁹⁴ The Database Directive mandates two shields and permits Member States to enact three “fair use” shields. Although the Council²⁹⁵ based its decision to eliminate the compulsory licensing provision in part on the “fair use” shields,²⁹⁶ their adoption remains optional to Member States.²⁹⁷

a. The Mandatory Shields

The first mandatory shield deems public lending not an act of extraction or utilization. Logically, this shield would

principles be available to fair followers seeking to compete with *sui generis* rightholders. See Database Directive, *supra* note 1, recital 47, O.J. L 77/20, at 23 (1996). As explained in the Database Directive:

[I]n the interests of competition between suppliers of information products and services, protection by the *sui generis* right must not be afforded in such a way as to *facilitate* abuses of a dominant position, in particular as regards the creation and distribution [sic] of new products and services which have an intellectual, documentary, technical, economic or commercial added value

Id. (emphasis added).

294. Database Directive, *supra* note 1, recitals 49-51, O.J. L 77/20, at 23 (1996).

295. See *supra* note 150 and accompanying text.

296. See Common Position, *supra* note 150, Statement of the Council's Reasons 15, O.J. C 288/02, at 26-27 (1995) and Database Directive, *supra* note 1, art. 9, O.J. L 77/20, at 26 (1996).

297. See Common Position, *supra* note 150, Statement of the Council's Reasons 15, O.J. C 288/02, at 26-27 (1995) and Database Directive, *supra* note 1, art. 9, O.J. L 77/20, at 26 (1996). The Parliament's failure to require adoption of these optional shields conflicts with the professed harmonization goals of the EC in promulgating the Database Directive. See Common Position, *supra* note 150, Statement of the Council's Reasons 4, O.J. C 288/02, at 23 (1995). Failure to mandate adoption of these shields by Member States could work especial hardships on academicians and scientists whose research knows no artificial territorial boundaries. See SCIENCE & ENGINEERING INDICATORS, *supra* note 23, at 7-4 (explaining that scientific and academic research is an international undertaking that knows no artificial geographic or political boundaries).

belong to libraries, but it appeared in the Common Position without comment or explanation.²⁹⁸

The second mandatory shield permits users to make insubstantial extractions and reutilizations for “any purposes whatsoever.”²⁹⁹ “Any purposes whatsoever” is limited by the correlative obligations imposed on users to refrain from committing acts that “conflict with a normal exploitation of the database or unreasonably prejudice the legitimate interests of the maker of the database.”³⁰⁰ Given the unabashed commercial focus of the Database Directive on the database maker’s investment interests,³⁰¹ users hiding behind this shield should tread carefully when their use might prejudice those commercial interests.

On the other hand, the commercial focus of the Database Directive³⁰² might aid those using database contents for noncommercial purposes. For example, a scientist recompiling insubstantial portions of old data for noncommercial purposes, from a database whose commercial value derives primarily from the timeliness of its data,³⁰³ could argue that

298. See Database Directive, *supra* note 1, art. 7(2), O.J. L 77/20, at 26 (1996). However, logically library users would still be subject to limits of the Database Directive; else, this provision would allow competitors to circumvent the protections afforded by the *sui generis* regime by accessing databases through libraries.

299. See *id.* art. 8(1), O.J. L 77/20, at 26 (1996); see also *id.* art. 15, O.J. L 77/20, at 27 (1996) (making contrary contractual provisions null and void). Apparently, defining what constitutes an “insubstantial part” is a definitional task entrusted to the European Court of Justice. See Gaster, *supra* note 128, at 4.

300. Database Directive, *supra* note 1, art. 8(2), O.J. L 77/20, at 26 (1996); cf. Berne Convention, *supra* note 8, art. 9(2), 828 U.N.T.S. at 238-39.

301. Database Directive, *supra* note 1, recitals 7-12, 38-42, 47, O.J. L 77/20, at 20, 22-23, art. 7, O.J. L 77/20, at 25 (1996); see also Common Position, *supra* note 150, Statement of the Council’s Reasons 14, O.J. C 288/02, at 26 (1995).

302. Database Directive, *supra* note 1, recitals 7-12, 38-42, 47, O.J. L 77/20, at 20, 22-23, art. 7, O.J. L 77/20, at 25 (1996); see also Common Position, *supra* note 150, Statement of the Council’s Reasons 14, O.J. C 288/02, at 26 (1995).

303. Note, however, that the value/price of data varies based on factors other than just timeliness. For example, value-added features such as analyses, verification, or accompanying analytical tools increase the price of data. In addition, data, like any other commodity, are subject to basic economic principles such as the law of supply and demand. See generally ADAM SMITH, THE WEALTH

such activity does not prejudice the database maker's legitimate, commercial interests.

Moreover, the commercial focus of the Database Directive may convince the European courts to examine the nature of the commercial interests affected when determining whether an extraction or reutilization is "substantial."³⁰⁴ For example, a user extracting one week of old data can better argue that such an extraction was legitimate, or insubstantial, than can a user who extracted one week of current, timely data.³⁰⁵

Thus, the commercial focus of the Directive, coupled with the Commission's decision to leave the task of defining "substantial part" to the European Court of Justice,³⁰⁶ permits the European courts to view users through a commercial lens to determine whether their extraction or reutilization prejudices the database maker's legitimate, commercial interests.

b. The Optional "Fair Use" Shields

The remaining "fair use" shields are optional and cannot be exercised in such a way as to prejudice the database maker's rights.³⁰⁷ Some commentators argue that even if Member States adopt these optional shields, the Database Directive still fails to protect those advancing fundamental science.³⁰⁸

OF NATIONS 49 (1776). For example, raw, real-time financial data (equity quotes) can be obtained from several sources (such as CNN*fn*) free of charge (if one has Internet access). However, because over time these same data become scarce (only those who capture and store the real-time data will possess the data), the supply curve shifts and, consequently, assuming the demand curve does not shift proportionately in a corresponding direction, the price of these data increases. See generally MILTON H. SPENCER, CONTEMPORARY MACROECONOMICS 43-56 (7th ed. 1990).

304. See *supra* notes 193, 301.

305. But see note 303.

306. See *supra* note 128.

307. Database Directive, *supra* note 1, recital 50, O.J. L 77/20, at 23 (1996).

308. See GLOBAL ACCESS, *supra* note 4, at 13-14 (arguing that these shields are

Assuming the Member States adopt these shields, they collectively allow extraction of substantial parts of publicly-available databases for private purposes in the case of nonelectronic databases, and for illustration in teaching and for scientific research, provided the user indicates the source, to the extent justified by the noncommercial purpose; and extraction and reutilization of substantial parts for public security, administrative, or judicial purposes.³⁰⁹

The first optional shield, which permits extraction of substantial parts of publicly-available databases for private purposes,³¹⁰ illogically distinguishes between nonelectronic and electronic databases. By using high-speed scanners and optical character recognition software, nonelectronic databases can be electronically converted almost as easily as electronic databases.³¹¹ Moreover, the reasons given by the Council for extending the scope of the Database Directive to include nonelectronic databases apply equally here, but apparently received no consideration.³¹²

The second optional shield, which permits extraction of substantial parts of publicly-available databases for illustration for teaching or for scientific research,³¹³ could go far in ameliorating the concerns of those decrying the Database Directive's *sui generis* regime because of its potential effect on research.³¹⁴ Provided the user indicates the source, and can justify the use as noncommercial, only the database maker's legitimate interests limit the user's ability to use the contents of the database for the "purposes of illustration for teaching

of little use to those conducting scientific research).

309. Database Directive, *supra* note 1, art. 9, O.J. L 77/20, at 26 (1996). The third and final optional shield, permitting not only extraction, but also reutilization of substantial parts of the database, in the interests of public security, and for the purposes of administrative or judicial procedures, is not discussed herein.

310. *Id.* art. 9(a), O.J. L 77/20, at 26 (1996).

311. *See supra* note 190.

312. *See* Common Position, *supra* note 150, Statement of the Council's Reasons 8, O.J. C 288/02, at 24 (1995).

313. Database Directive, *supra* note 1, art. 9(b), O.J. L 77/20, at 26 (1996).

314. *See supra* note 23.

or scientific research.”³¹⁵

Some argue that this second optional shield is merely “fool’s gold,” which reinforces the overly protective thrust of the Database Directive.³¹⁶ Under this view, the scientist can illustrate his or her conclusions, but cannot browse the database or use the collected data without succumbing to the monopoly power of the sole-source database maker. Although one could read the Database Directive in this manner, a careful, contextual reading supports the previous view:³¹⁷ noncommercial uses of the database contents for the purposes of illustration for teaching or for scientific research is limited only by the legitimate interests of the database maker.³¹⁸

Even if the European courts follow the parsimonious view of the second optional shield, the fact remains that anyone, including individual academicians or collective scientific and technical institutions, can become database makers.³¹⁹ This fact should not be dismissed lightly, either by legal or economic theorists, or by commercial data compilers, because, by wielding the rights afforded by the Database Directive’s *sui generis* regime, the information-producing aca-

315. Database Directive, *supra* note 1, art. 9, O.J. L 77/20, at 26 (1996); *see supra* note 305.

316. *See* Reichman & Samuelson, *supra* note 4, at 89-90.

317. *Id.* The latter view ignores the difference between the shield provided in the copyright domain and the shield provided in the *sui generis* domain. Compare Database Directive, *supra* note 1, art. 6(2)(b), O.J. L 77/20, at 25 (1996) (“for the sole purpose of illustration for teaching or scientific research”) (copyright domain) with Database Directive, *supra* note 1, art. 9(b), O.J. L 77/20, at 26 (1996) (for the purposes of illustration for teaching or scientific research) (*sui generis* domain) (emphasis added); *cf.* Gaster, *supra* note 128, at 11 (noting that the exceptions “usually only relate to the extraction right . . . because re-utilization is predominantly of a commercial nature”).

318. Logically, the database maker’s legitimate interests will be broader *vis-à-vis* the academic or scientist if the database is designed for, and marketed to, the academic or scientific communities. However, the scientist or academic can still resort to the mandatory shields discussed above.

319. *See supra* note 13.

demic and scientific communities³²⁰ could potentially become gatekeepers to the technical and scientific data market.³²¹

The significance of the scientific and academic communities fending for themselves in a commercialized information market is considered more fully in the context of the opportunities and threats to basic science discussed in Part IV of this Article. For now, it is sufficient to note that even if the second optional shield proves to be “fool’s gold,” the swords and shields available in the EC should ensure that the toll fence raised by the Database Directive remains a pro-competitive fence, not an insuperable monopolistic wall.³²²

D. Effects within the European Community

Although the shadow of protection cast by the Database Directive’s *sui generis* regime will remain uncertain until interpreted by the authoritative administrative and judicial bodies, to the extent that legal protections create incentives

320. See, e.g., SCIENCE & ENGINEERING INDICATORS, *supra* note 23, at 5-30 (noting that, in 1993 alone, 414,000 articles were published in the 4,681 peer-reviewed natural science and engineering journals recognized in the Institute of Scientific Information’s Scientific Citation Index).

321. Indeed, the scientific community has begun to assume this role in some scientific disciplines. See, e.g., Paul Ginsparg, *Winners and Losers in the Global Research Village* 3 (visited May 11, 1997) <<http://www.lanl.gov/blurb/pg96unesco.html>> (noting that automated online archives of physics research, contributed by the scientific community, has virtually supplanted conventional journals); see also J. C. Sens, *Electronic Publishing via Scientific Societies* (visited May 11, 1997) <<http://www.grainger.uiuc.edu/icsu/sens.htm>> (outlining a proposal for a non-profit organization to provide unreviewed scientific articles free of charge, and to provide reviewed articles at a cost sufficient to finance the non-profit organization). If this trend continues, the “freedom of information” position taken by some in the academic and scientific communities will be put to the test, and we shall see precisely how “free” those communities believe information should be.

322. But cf. Reichman & Samuelson, *supra* note 4, at 90 (arguing that the protection afforded by the Database Directive to data is exceeded only by the protection granted by the classic patent paradigm); see also GLOBAL ACCESS, *supra* note 4, at 35 (arguing that under “an exclusive rights model . . . a database owner[] [has an] absolute monopoly . . .”).

to produce,³²³ the *sui generis* regime should increase database production in the EC.³²⁴ At the same time, the United States Supreme Court has left diligent compilers in the United States vulnerable to the misappropriative efforts of parasitic competitors and information Samaritans.³²⁵ Unless the United States adopts a regime providing equivalent protection, the synergistic effect of these two factors, coupled with the increasing convergence of the European market, may indeed help the EC achieve their goal of gaining a larger share of the worldwide database market.³²⁶

With respect to nonproprietary data, the Database Directive's *sui generis* regime should increase information availability and accessibility within the EC by increasing production incentives.³²⁷ In addition, because protection is linked to production costs, rather than the superficial form of the final product, the Database Directive's *sui generis* regime should operate without the price-distorting effects of an enhanced copyright regime.³²⁸

While increased information availability and accessibility under the Database Directive's *sui generis* regime will come at a certain price, absent adequate production incentives in-

323. Perritt, *supra* note 4, at 261 (citing Locke and Blackstone); Karjala II, *supra* note 38, at 2594 (explaining that an absence of legal protection for intellectual property acts as a disincentive to invest); Lunney, *supra* note 64, at 486 n.5 (property rights are used to provide incentives to invest in intellectual property production); Ginsburg, *supra* note 6, at 349.

324. See Samuelson, *supra* note 11, at 6 (pointing out that the two countries with the biggest market share have historically protected "noncreative" labors of database makers through "sweat of the brow" and "industrious collection" rationales). However, the Database Directive's *sui generis* regime could reduce incentives in Great Britain where 'sweat-of-the-brow' databases already enjoy protection under copyright law. See *supra* note 8.

325. See *Feist Publications, Inc. v. Rural Telephone Serv. Co.*, 499 U.S. 340 (1991); *supra* note 10 (discussing information Samaritans).

326. See Database Directive, *supra* note 1, recitals 11-12, O.J. L 77/20, at 20 (1996).

327. See *supra* notes 236, 322-23.

328. See *supra* notes 67-68 and accompanying text; see also Denicola, *supra* note 12, at 530.

formation seekers still pay a price: instead of paying a fee to access an available database, information seekers pay in the form of lost-opportunity costs—costs incurred in the form of time and effort expended in finding the information,³²⁹ assuming the information can be found at all. Thus, in the case of nonproprietary data, the Database Directive will give information seekers an otherwise unavailable choice: pay the gatherer for her efforts and marshal their energies toward uses they deem more valuable, or gather their own data.³³⁰

In contrast, in the case of some proprietary or sole-source data, information seekers are not given a choice—they cannot practicably go forth and gather their own data.³³¹ However, the swords and shields available in the EC may inject enough legal uncertainty in the minds of would-be data monopolizers to encourage them to engage in reasonable behavior *vis-à-vis* competitors and others seeking licenses.³³² In light of these mechanisms, and the Database Directive's mandated triennial assessment of the *sui generis* rights concerning abusive and anticompetitive behavior,³³³ concerns regarding the Database Directive's anticompetitive effects and effect on information flow within the EC,³³⁴ while not eliminated, are probably overstated.³³⁵

IV. THE DATABASE DIRECTIVE: STEPPING STONE TO AN

329. See generally A. MITCHELL POLINSKY, AN INTRODUCTION TO LAW AND ECONOMICS (2d ed. 1989).

330. Because of the explosive growth of the Internet the latter choice is becoming increasingly available. See *supra* notes 230-31.

331. See *supra* note 199 (defining "sole-source data").

332. Cf. Reichman & Samuelson, *supra* note 4, at 149 (arguing that the legal uncertainty arising from fair use requirements gives producers and users "maximum incentives to negotiate . . . licenses" on reasonable terms).

333. See Database Directive, *supra* note 1, art. 16, O.J. L 77/20, at 27 (1996); see also *id.* recital 47, O.J. L 77/20, at 23 (1996).

334. See *supra* notes 22-23, 205 and accompanying text.

335. It seems more plausible to assume that the EC will respond to problems associated with the Database Directive, than to assume that it will continue shooting itself in the foot after a problem is detected.

INTERNATIONAL MODEL

This part first proposes that any international *sui generis* regime modeled on the Database Directive be modified by incorporating a compulsory licensing mechanism to enable competition in the case of sole-source data. This part then examines the purported hazards lurking, and the opportunities awaiting, the scientific and academic communities in an environment that privately allocates information based upon price.

A. *Enabling Competition in a Commercialized Information Market*

Collectively, the Database Directive, along with supranational and national European competition laws (“European competition law”), provide ameliorative mechanisms sufficient to offset, or permit downstream adjustments to compensate for, the potential problems associated with a regime which may permit *de facto*, although not *de jure*, ownership rights in sole-source data.³³⁶ However, similar ameliorative mechanisms, like the pro-competitive “Excalibur-like” sword found in *Magill* and other pro-competition policies embedded in European competition law,³³⁷ are not available at an international level.³³⁸ Consequently, an international *sui generis* regime may require a mechanism to ensure that new and value-added information products are not kept off the market by those who refuse to license sole-source data.³³⁹

336. See *supra* notes 211-13 and accompanying text.

337. See *supra* notes 277-92 and accompanying text.

338. See, e.g., Fox, *supra* note 29, at 487-90 (noting the lack of any coherent international competition law and discussing five scenarios where the two major models, United States antitrust law and EC competition law, would likely differ in application).

339. See, e.g., Reichman & Samuelson, *supra* note 4, at 77.

1. Mandating Licenses in the Case of Sole-Source Data

One such mechanism, found in the *sui generis* regime initially proposed by the EC, is a compulsory licensing scheme.³⁴⁰ A compulsory licensing mechanism could be loosely modeled on the compulsory licensing mechanism copyright provides for nondramatic musical works.³⁴¹ Properly designed, such a mechanism could enhance competition in a fully commercialized information market by ensuring that value-added products are not kept off the market by database makers who refuse to license sole-source data, and by ensuring that the specter of competition hovers as a potential restraint on those database makers inclined to seek monopolistic rents for sole-source data.

2. Compulsory Licenses Should Serve the Interests of the Database Maker and the Public

A compulsory licensing mechanism could be designed with a dual rate structure, one based on a statutory minimum rate, the other based upon the database maker's actual costs. Such a rate structure could protect the public's interest in competition in the sole-source data market without unduly prejudicing the commercial interests of the database maker.

As a starting point, the statutory rate could be determined by multiplying the number of bytes³⁴² reused or ex-

340. See Initial Proposal, *supra* note 11, art. 8, O.J. C 156/03, at 9 (1992); Amended Proposal, *supra* note 24, art. 11, O.J. C 308/01, at 13-14 (1993) (mandating compulsory licenses on "fair and nondiscriminatory terms" in the case of sole-source data); cf. Reichman, *supra* note 10, at 2539-44 (proposing off-the-rack liability regime with built-in compulsory license); see also Samuelson et al., *supra* note 35, at 2412-14.

341. See, e.g., 17 U.S.C.A. § 115 (West Supp. 1996).

342. "Byte" is a term used to quantify data streams. See, e.g., THE AMERICAN HERITAGE COLLEGIATE DICTIONARY 194 (3d ed. 1993) (defining a "byte" as equivalent to one character or eight bits).

tracted times a small charge, such as a fraction of a cent, or other appropriate monetary unit.³⁴³ Alternatively, database makers should remain free to reject the statutory rate in favor of a second rate structure based upon actual costs.

Under this second rate structure, the database maker should bear the burden of proving actual costs associated with particular data, but could thereafter charge accordingly.³⁴⁴ This rate structure would legitimately enable database makers with high data-collection costs, or narrow markets over which to spread their data-collection costs, to recover a greater proportion of their costs from would-be competitors.

343. Cf. 17 U.S.C.A. § 115 (covering mechanical copyright royalties). A further refinement of the compulsory licensing scheme might include a prohibition on substantial electronic extraction and conversion by competitors for a short blocking period designed to provide the maker with sufficient lead-time to recover her costs in the market. Cf. Samuelson et al., *supra* note 35, at 2412-14 (blocking period followed by compulsory license); see also Reichman, *supra* note 10, at 2544-51. In addition, a compulsory licensing mechanism might encourage formation of private collection societies which would permit interested parties to bargain around the statutory rate. Cf. Reichman & Samuelson, *supra* note 4, at 140 (noting that the Harry Fox agency acts as a “*de facto* collection society [for] . . . some 200,000 voluntary licenses . . .”); cf. Kennedy & Dweck, *supra* note 53, at C17 (reporting that the Author’s Guild and the American Society of Journalists formed the Author’s Registry this year to represent freelance writers in an effort to impose usage-based royalties on publishers for electronic uses of their works). Professors Reichman and Samuelson suggest that a statutory rate be set by industry in light of two criteria: (1) the cost-recovery principle familiar to scientific agencies, which focuses on the reasonableness of profit margins, and (2) the value the licensed data adds to the fair follower’s product. See Reichman & Samuelson, *supra* note 4, at 140. They also suggest that a statutory rate would result in bargaining by users and producers, and would permit “a more nuanced schedule of royalties . . . than a statute could . . . institute.” *Id.* at 141.

344. Although the database maker might incur additional costs in proving actual costs, proving them should be less costly than triggering competition law because the maker need only produce reliable evidence of her data collection costs. Moreover, since each *sui generis* regime saddles the database maker with the burden of proving substantial investment, the prudent database maker will have adequate documentation of investment costs. See Database Directive, *supra* note 1, art. 7(1), O.J. L 77/20, at 25 (1996); H.R. REP. NO. 3531, *supra* note 1, §§ 2, 3(a), 6(a); *WIPO Proposal*, *supra* note 1, Note 2.07 WIPO Doc. CRNR/DC/6 (Aug. 30, 1996) (“[i]n any dispute, it is the burden of the maker of the database to demonstrate the necessary investment”); see also Gaster, *supra* note 128, at 12.

At the same time, users and competitors seeking to use the sole-source data should remain free to challenge database makers who opt for the second rate structure, and should reap the benefits of a successful challenge by obtaining the data at lesser of the statutory rate or the actual cost.³⁴⁵ Finally, to further encourage bargaining, and to finance the administrative mechanism to arbitrate actual cost disputes, the loser could be assessed costs, including costs incurred by the other party and administrative costs. Such a dual rate structure could accommodate a negotiated “menu of liability options”³⁴⁶ analogous to Professors Reichman and Samuelson’s proposal for a liability regime,³⁴⁷ without unfairly saddling database makers with the bill for subsidizing downstream data users.

3. Prohibiting Exclusive Licensing Arrangements

To further ensure that competition reigns in the data market, exclusive licensing arrangements with sole-source data producers could be deemed void against public policy. Thus modified by introducing liability principles,³⁴⁸ an international *sui generis* regime modeled on the Database Directive could ensure that competition performs its protective role³⁴⁹ even in the case of sole-source data.³⁵⁰

345. If the database industry chose to form a collection society to minimize transaction costs associated with licensing, the first appeal might lie within the collection society. See *supra* note 342. Thereafter, either party could appeal the actual cost determination to an appropriate court or, if the mechanism so provides, an arbitration committee.

346. Reichman & Samuelson, *supra* note 4, at 141.

347. *Id.*

348. See Initial Proposal, *supra* note 11, art. 8, O.J. C 156/03, at 9 (1992); Amended Proposal, *supra* note 24, art. 11, O.J. C 308/01, at 13-14 (1993) (mandating compulsory licenses on “fair and nondiscriminatory terms” in the case of sole-source data); cf. Reichman, *supra* note 10, at 2539-44 (proposing off-the-rack liability regime with built-in compulsory license); see also Samuelson et al., *supra* note 35, at 2412-14; cf. 17 U.S.C.A. § 115.

349. Zeidenberg, 86 F.3d at 1453 (citation omitted) (noting that competition protects consumers in a free market economy).

350. See *supra* note 199 (defining “sole-source data”).

A compulsory licensing mechanism will not, however, aid competition in markets without sufficient demand to support additional competitors: neither will it aid competition in areas where information is provided under nonmarket conditions, the conditions under which some scientists perform basic research and development.³⁵¹

B. *Potential Effects on Basic Research and Development*

Assessing the role research³⁵² and development³⁵³ (“R&D”) plays in technological innovation, and its resulting societal effects, is an extremely complex task.³⁵⁴ The complexity of the task stems in part from the complexity in fund-

351. For example, scientists and other users can obtain publicly-funded information on a cost-recovery basis by the United States to scientists and other users. See Freedom of Information Act, 5 U.S.C.A. § 552 (West Supp. 1996); GLOBAL ACCESS, *supra* note 4, at 22; Reichman & Samuelson, *supra* note 4, at 113. In addition, the Electronic Freedom of Information Act of 1996, Pub. L. No. 104-231, 110 Stat. 3048 (effective October 2, 1996), requires federal agencies to provide that information in “any form or format requested . . . if the [information] is readily reproducible by the agency in that form or format.” See 5 U.S.C.A. § 552(a)(3)(B).

352. Conventional innovation models, which presume a linear innovation process, generally divide research into two levels: basic and applied. See SCIENCE & ENGINEERING INDICATORS, *supra* note 23, at 4-9. “Basic research” seeks to further scientific knowledge for its own sake, without regard to specific applications. *Id.* “Applied research” seeks to determine the means by which a particular, specified need can be met. *Id.* However, most innovation experts recognize that the innovation process is far more complex than the linear model suggests. See *id.* (citing Donald Stokes forthcoming book, PASTEUR’S QUADRANT). Stokes classifies research into three levels: pure basic research (research conducted solely in the quest for basic understanding), pure applied research (research conducted solely for its potential use), and strategic research (research conducted both for its potential use and for basic understanding). *Id.* As used herein, “basic research” means pure basic research. In addition, except when stated otherwise, this section examines data reflecting only United States research and development patterns.

353. “Development” is the systematic use of the products of research, knowledge and understanding, toward the production of useful products, processes, or services. SCIENCE & ENGINEERING INDICATORS, *supra* note 23, at 4-9.

354. The complexity stems not only from informational difficulties, but also from differing analytical and philosophical approaches. *Id.* at 8-3 (citations omitted).

ing the R&D process,³⁵⁵ from the difficulties in assessing the spillover effects of R&D,³⁵⁶ and from the difficulties in attaching value to the benefits derived from technological growth.³⁵⁷ This section does not attempt such a monumental task, but rather attempts only a general assessment of the potential effects of a *sui generis* regime which protects the investment of database makers, on a subcomponent of the R&D process: “basic research.”³⁵⁸

According to some of those charged with conducting basic research, even if an international *sui generis* regime is not

355. In the United States, R&D is performed and funded by industry, government, and academia. *See id.* at 4-2. Of the \$171 billion spent on R&D in the United States in 1995, 60% was spent on development, 23% was spent on applied research, and 17% (approximately \$29.6 billion) was spent on basic research. *See id.* at 4-9. Although industry funds and performs the majority of overall R&D, the majority of industry funds are spent on applied research and development. *See id.* at 4-5 to 4-7 (reporting that, in 1995, industry provided approximately 59% of total R&D expenditures in the United States, and performed approximately 70% of the total R&D). In the area of basic research, the federal government provides the majority of funding, while the academic sector performs most of the basic research. SCIENCE & ENGINEERING INDICATORS, *supra* note 23, at 4-9 (reporting that federally-allocated funds comprised approximately 58% of the \$29.6 billion spent on basic research); *see id.* (reporting that academia performed approximately 50% of basic research conducted in the United States in 1995). Although all three sectors have experienced a reduction in the rate of growth in dollars spent on research and development, academia is the only sector that has experienced a constant dollar increase since 1986. *Id.*

356. Because basic research is often shared among scientists, e.g., by publication in scientific journals and by private circulation among colleagues, it is difficult for those conducting the research to capture the ripple effects, or spillover benefits produced by the research. *See id.* at 8-6 to 8-7. In addition, initial research may find application (“spillover”) in other industrial sectors and scientific disciplines. *See id.* at 6-4, 8-6, to 8-7. Finally, the ripple effect of basic research conducted in academic institutions represents a “crucial component in training future scientists and engineers, many of whom will one day be working in [industrial] laboratories.” SCIENCE & ENGINEERING INDICATORS, *supra* note 23, at 4-10.

357. For example, the difficulties inherent in attaching a monetary value to technological breakthroughs that save human lives; or, in attaching a monetary value to the more general benefit of promoting a “culture of *reasoned discourse*.” *See id.* at 8-10 to 8-11.

358. Unlike “applied research,” which seeks to determine the means by which a particular, specified need can be met, “basic research” seeks to further scientific knowledge without regard to specific application. *See id.* at 4-9.

adopted, the Database Directive may cause a paradigmatic shift in the way basic research is conducted.³⁵⁹ This concern rests on the argument that because the Database Directive's *sui generis* regime may create *de facto* property rights in basic research data, the "principle of full and open exchange" will give way to "mini-monopolies" which will in turn significantly diminish long-term R&D capabilities.³⁶⁰ The following subsection delineates those concerns.

1. Concerns Expressed by Those Conducting Basic Research

Opponents of the Database Directive's *sui generis* regime, and of an international *sui generis* regime modeled on the Database Directive, cite three main concerns, all of which center on the effect of such a regime on the accessibility of data.³⁶¹ First, they argue that an international *sui generis* regime will give database makers an absolute monopoly on data.³⁶² Because of this exclusive right in data, critics claim, the database maker will either deny access or charge a price that science cannot pay.³⁶³

359. See, e.g., GLOBAL ACCESS, *supra* note 4, at 27; Academy Letter, *supra* note 23, at 2 (discussing "ethos of sharing"); see generally THOMAS S. KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS (2d ed. 1970).

360. See GLOBAL ACCESS, *supra* note 4, at 14; Academy Letter, *supra* note 23, at 2; Reichman & Samuelson, *supra* note 4, at 91; Rosler, *supra* note 11, at 140-41.

361. However, even those opposing the current proposals agree that the "core idea underlying current *sui generis* proposals is sound, even if the mechanisms proposed to address the problem are flawed." See Reichman & Samuelson, *supra* note 4, at 130. Additional concerns expressed by opponents were addressed previously with respect to Database Directive's effects within the EC. See *supra* notes 277-321 and accompanying text.

362. See Academy Letter, *supra* note 23, at 1-2; Reichman & Samuelson, *supra* note 4, 90-102 (arguing that each regime grants monopoly rights); GLOBAL ACCESS, *supra* note 4, at 35 (arguing that under "an exclusive rights model . . . a database owner[] [has an] absolute monopoly").

363. See Reichman & Samuelson, *supra* note 4, at 115-16; see also GLOBAL ACCESS, *supra* note 4, at 8-9. Although the *sui generis* regime may lead to higher data costs, in the form of fees or independent generation costs, charging for data is not a revolutionary concept. Information is not, nor has it ever been free—someone, whether it be the government, or other information users who sub-

Second, opponents argue that, because any entity can find protection under such a *sui generis* regime,³⁶⁴ foreign governments will enter the database markets and charge market prices for publicly-funded data previously supplied on a cost-recovery basis.³⁶⁵ Critics project that this development, coupled with the incentive to privatize data, will result in an ever-shrinking pool of public domain information.³⁶⁶

Finally, opponents argue that the incentive to privatize data created by such a regime is antithetical to the principle of “full and open exchange” of scientific data.³⁶⁷ Critics speculate that the collective effect of this “parade of horrors,”³⁶⁸ which would follow adoption of such a *sui generis* regime,³⁶⁹ could have grave consequences to the United States’ ability to maintain its lead in technological innovation.³⁷⁰

2. Potential Benefits to Those Conducting Basic Research

Although *de facto* property rights in data causes much concern to those whose lifeblood is data, a regime which

dize information pirates and parasites, has always paid the price. See Pamela Samuelson, *Information as Property: D. Ruckelshaus and Carpenter, Signal Changing Direction in Intellectual Property Law?*, 38 CATH. U. L. REV. 365, 367 (1989). Moreover, in some degree information has always existed as a commodity available to those with the wherewithal to purchase it. *Id.*

364. However, note that H.R. 3531 specifically excludes governmental agencies and employees in their official capacity from the scope of its protection. See H.R. REP. NO. 3531, *supra* note 1, § 2.

365. See Reichman & Samuelson, *supra* note 4, at 115-16; GLOBAL ACCESS, *supra* note 4, at 15.

366. See Reichman & Samuelson, *supra* note 4, at 117, 128; see also GLOBAL ACCESS, *supra* note 4, at 34-35.

367. See Academy Letter, *supra* note 23, at 2; Reichman & Samuelson, *supra* note 4, at 114 (arguing that basic science requires an abundant infusion of “cheap data in ways that encourage serendipity and playful exploration”).

368. See Reichman & Samuelson, *supra* note 4, at 128.

369. *Id.*

370. See *id.* at 115-17.

grants the commercial database maker a *de facto* property right in data grants the same right to the dedicated-researcher-turned-database-maker.³⁷¹ Thus, while the potential negative effects demand careful attention by policy makers before adopting an international *sui generis* regime modeled on the Database Directive,³⁷² policy makers should assess the potential negative effects in light of the potential benefits to those decrying the Directive and the Proposals it has spawned, and in light of the potential benefits to society as a whole.

a. Market Participation

Those conducting basic research and their employers, universities, for example, are not only data users, but are also data producers. As data producers, researchers can engage the market for protection. For example, the academic and scientific communities might collectively organize and form large databases fed continually by their respective communities.³⁷³ Given the sheer volume of information

371. Moreover, the term of the *de facto* monopoly will be determined by the difficulty of unearthing the data and the relevant database market. That is, the data collector will face price competition earlier, or data users will independently generate the data, if data are relatively easy to independently discover and generate. Conversely, if data are relatively difficult to discover or generate, the data collector may receive a longer term of protection.

372. These effects should also be considered by EC members when implementing the Database Directive. See Reichman & Samuelson, *supra* note 4, at 108 (noting that even if an international *sui generis* regime is not adopted, the Database Directive may force a paradigmatic shift in the way scientists, academics, and others operating in a noncompetitive or subsidized environment, conduct research and other information-intensive activities); see also GLOBAL ACCESS, *supra* note 4, at 25-26 (arguing that EC members should implement the Database Directive by freighting "data generated by public funds . . . with a built-in, cost-based discount for scientific research and education as a condition of further commercialization by others").

373. Although this may require some logistical nimbleness, given today's software tools, it takes relatively little programming expertise to form a database which would find protection under the Database Directive. Moreover, the academic research community typically has ready access to programming expertise and computer hardware. Griffith Interview, *supra* note 40. In addition, formation

produced by these communities,³⁷⁴ an international *sui generis* regime might not only provide these communities with significant bargaining power in the commercial sector, but might also empower these communities to influence fundamental information policy.

Moreover, armed with this new-found bargaining power, the academic and scientific communities could engage the market in a number of ways. For example, they could engage commercial database makers in partnerships, providing data in exchange for innovative research tools and cost recovery access.³⁷⁵

Alternatively, the academic and scientific communities could choose to enter the market as database makers.³⁷⁶ As market participants, these communities could employ the resulting profits to replace ever-shrinking governmental funds,³⁷⁷ to pay for production costs, to pay for additional research and educational activities, or to pay individual researchers via a collection society.³⁷⁸

of a collection society might reduce transaction costs which might otherwise make small transactions cost-prohibitive. See Thomas K. Landry, *Columbia-VLA Journal of Law & The Arts Roundtable on Electronic Rights*, 20 COLUM.-VLA J.L. & ARTS 605, 645 (1996).

374. See *supra* note 320.

375. See Reichman & Samuelson, *supra* note 4, 108-10; cf. SCIENCE & ENGINEERING INDICATORS, *supra* note 23, at 5-43 (noting that the strong upward trend in gross revenues generated by academic patenting indicates an awareness and willingness on the part of private industry to invest in academia) citing a 1994 survey conducted by the Association of University Technology Managers, Inc.

376. See Hunsucker, *supra* note 219, at 35-36; cf. SCIENCE & ENGINEERING INDICATORS, *supra* note 23, at 5-42 (noting that the sevenfold increase in the number of patents awarded to the academic sector between 1960 and 1980 suggests that the academic sector is attempting to capture some of the economic benefits associated with basic research).

377. See, e.g., *id.* at 4-21 (noting the decline, in real terms, of overall federal R&D expenditures).

378. Cf. BIERDERMAN, ET AL., LAW AND BUSINESS OF THE ENTERTAINMENT INDUSTRIES 526-27 (3d ed. 1996) (describing ASCAP, BMI, and SESAC, collection societies who collect and distribute fees generated by performing rights); see also Landry, *supra* note 373, at 642 (describing the Authors Registry, a collection society which collects royalties on electronic distribution of written articles).

b. An International Treaty Addressing Publicly-Funded Data

While some governmental data are not reproducible and may not be subject to the limits of a competitive market,³⁷⁹ many of these data are presently available on a cost-recovery basis pursuant to bilateral or multilateral treaties.³⁸⁰ Additionally, although foreign governments may use the *sui generis* regime to finance government-sponsored research efforts, or may discriminate against researchers in the United States,³⁸¹ there are practical limits on the ability of foreign governments to do so.

Consider, for example, that the United States accounts for approximately forty-four percent of the world's R&D investment, outdistancing the next four largest investors combined.³⁸² Governments who discriminate against researchers in the United States, or who charge market prices for publicly-funded data, risk similar treatment from the United States. The threat of retaliation by the United States might act as an implicit limit on the price foreign governments charge for publicly-funded data.

Moreover, rather than face the wrath of its own citizens by charging market prices for publicly-financed data, the United States might exercise its strength in R&D to persuade

379. For example, data provided via governmentally-operated satellites. See, e.g., GLOBAL ACCESS, *supra* note 4, at 22.

380. *Id.*; see also *Bilateral Relations, Executive Summary* 6 (visited Nov. 11, 1996) <<http://www.ta.doc.gov/itp/bilat/summary.htm>> (noting that "during FY-1995 there were 805 S&T [Science & Technology] agreements in force between the U.S. and 78 other countries." For a representative listing of the current bilateral agreements, see <<http://www.ta.doc.gov/itp/bilat/nation1.htm>> (visited Nov. 11, 1996). In addition, one should note that international scientific collaboration and cooperation is increasing. See SCIENCE & ENGINEERING INDICATORS, *supra* note 23, at 5-35-37 (noting greater international collaboration on scientific and engineering articles); 4-42-48 (noting increasing international collaboration in the public and private sectors).

381. See *supra* note 365.

382. SCIENCE & ENGINEERING INDICATORS, *supra* note 23, at 4-35 and tables 4-33-4-35 (note that these data reflect total R&D, not just basic research).

foreign governments to supply publicly-financed data to science on reasonable terms.³⁸³ Alternatively, foreign action regarding publicly-funded data which the United States perceives as unfair may precipitate a single international treaty addressing publicly-funded data.³⁸⁴

c. Reducing Inefficiencies Masked by Hidden Subsidies

Subjecting basic research to the discipline of a commercialized data market may reduce hidden costs imposed by the systemic inefficiencies associated with research conducted under less-than-market conditions. For example, openly charging for data may give users a financial incentive to make decisions based upon actual need, which may result in more focused research.

In contrast, “free” access to information, which is not really free but rather subsidized by someone else, may encourage unnecessary and unfocused research on systems with finite capacities, which may render systems unavailable to others. Thus, attaching a market price to information may lead to wider data availability and accessibility by freeing what would otherwise be unavailable system capacity.

d. Not a Threat to Technological Innovation

Even if imposing additional costs on basic research, whether in the form of fees or of independent generation costs, shifts the focus of basic research from the discovery of knowledge for its own sake to the discovery of knowledge to solve a particular societal problem, it does not necessarily

383. See, e.g., GLOBAL ACCESS, *supra* note 4, at 27; see also *supra* note 351 (citing the Freedom of Information Act).

384. For example, an international treaty might require governments to supply their data on “fair and nondiscriminatory terms.” See *supra* note 338; cf. GLOBAL ACCESS, *supra* note 4, at 25 (arguing that publicly-funded data should come freighted with a built-in discount for science).

follow that such a shift will reduce the number of technological breakthroughs. On the contrary, some empirical evidence suggests that technological breakthroughs are just as likely to precede, rather than follow, basic research.³⁸⁵

Thus, while the Database Directive's *sui generis* regime, or an international *sui generis* regime modeled on the Database Directive, poses risks to academic and scientific researchers, it also presents many opportunities to those same researchers (or those making the substantial investment in database production), including the opportunity to recover some spillover subsidies they currently provide to the industrial sector.³⁸⁶

C. Potential Benefits to Society

Like the railroad of yesteryear, information is the engine that drives commercial innovation and social advancement;³⁸⁷ it is the cornerstone of electronic commerce.³⁸⁸ Mil-

385. See *supra* note 350 (regarding linear/nonlinear innovation models); see also SCIENCE & ENGINEERING INDICATORS, *supra* note 23, at 4-9 (citing Donald Stokes forthcoming book, PASTEUR'S QUADRANT, which sets forth examples of real world technological breakthroughs accomplished by those such as Pasteur, Faraday, and Kelvin, whose research focused on both fundamental understanding and potential application; see also *id.* at 5-42 (noting that the academic sector, which performs most of the basic research, is increasingly focusing on commercially relevant technologies).

386. See *supra* note 354.

387. See WIPO Proposal, *supra* note 1, Preamble WIPO Doc. CRNR/DC/6 (Aug. 30, 1996) ("[D]atabases are a vital element in the development of a global information infrastructure and an essential tool for promoting economic, cultural, and technological advancement"; 142 CONG. REC. E890-04 (daily ed. May 23, 1996) (statement of Sen. Moorhead) ("[D]atabases . . . the linchpin of a dynamic commercial industry in the United States."); Database Directive, *supra* note 1, recital 9, O.J. L 77/20, at 20 (1996); cf. Rockwell Graphic Sys. v. DEV Indus., 925 F.2d 174, 180 (7th Cir. 1991) ("The future of the nation depends in no small part on the efficiency of industry, . . . [which in turn] depends in no small part on the protection of intellectual property."); see also Samuelson, *supra* note 363, at 367 ("In the information age, information becomes the primary economic commodity, the source of greatest wealth"); see generally, Jared Sandberg, *Microsoft Plans to Spend Big on the Internet*, WALL ST. J., Nov. 15, 1996, at B3 (reporting that Microsoft plans to spend \$400 million this year to development information content for its Internet services).

lions of information users, including scientists, professionals, scholars, consumers, and businessmen and women, make decisions based upon information every day.³⁸⁹ To the extent that a *sui generis* regime protecting investment in databases increases the production of databases, a tool that enhances information users' ability to retrieve the kernel of information needed to solve a particular scientific, legal, economic, or medical problem, the regime would enhance society's problem-solving abilities, increase productivity and decrease lost-opportunity costs,³⁹⁰ advance education and training, and facilitate the creation of a better-informed citizenry.³⁹¹

Additionally, a *sui generis* regime protecting investment in databases could produce profound long-term societal benefits if such a regime subtly shifts macroeconomic incentives from fictional works to more necessary factual works³⁹² having higher social utility.³⁹³ That is, assuming that legal protections create or protect incentives to produce, to the extent protection afforded factual works approaches or exceeds the protection afforded fictional works, societal resources

388. See, e.g., Bradford L. Smith, *Creating the Global Information Society: Looking Ahead*, in 2 FORDHAM INTERNATIONAL INTELLECTUAL PROPERTY LAW & POLICY (Hugh C. Hansen ed., forthcoming 1997) (explaining that users do not want new telecommunications equipment and computer hardware for its own sake, but rather for the information it allows them to access).

389. 142 CONG. REC. E890-04 (daily ed. May 23, 1996) (statement of Sen. Moorhead).

390. The lost opportunity costs consist of costs suffered by society in the form of nonproductive time spent searching for information. See generally A. MITCHELL POLINSKY, AN INTRODUCTION TO LAW AND ECONOMICS (2d ed. 1989).

391. See, e.g., 142 CONG. REC. E890-04 (daily ed. May 23, 1996) (statement of Sen. Moorhead).

392. Although one could correct the imbalance by reducing the protection currently afforded traditionally copyrightability works to little more than protection against wholesale copying, that solution seems unlikely given the vested interests in the copyright regime. See generally Glynn S. Lunney, Jr., *Reexamining Copyrights' Incentive Access Paradigm*, 49 VAND. L. REV. 483 (1996).

393. By according factual works only a thin veil of copyright protection because of their high degree of social utility, society has implicitly, if not explicitly, deemed factual works more valuable than fictional works. See Lunney, *supra* note 65, at 568-70.

should be redirected toward production of factual works.³⁹⁴ Society would thus reap the benefit of increased production of more necessary factual information.

CONCLUSION

Market-destructive appropriators, commercially-motivated or not, skew incentives to invest in information generation and compilation. The EC took a bold, intellectually-honest step forward by adopting a *sui generis* regime to protect investment in databases. The Directive's *sui generis* regime does not create exclusive legal property rights in data, but does protect the investment of labor and capital, made by diligent compilers, in their compilations. By linking protection to the investment of capital and labor, the Database Directive's *sui generis* regime should increase, or at least preserve, incentives to collect and compile information in the EC. Because independent creation and imitation remain, as they should, perfectly legitimate means of competition, the Directive's *sui generis* regime protects compilers without unnecessarily suspending the principles of free competition in the nonproprietary data market.

At the same time, this Article recognizes the risk of impeding competition in the sole-source data market and the incentives to privatize data that such a regime creates. Nonetheless, there are sufficient ameliorative measures available to those within the EC to offset these risks, not the least of which is the fact that European courts will, if following the spirit of the Directive, focus on the legitimate commercial interests of the database maker when defining infringement. On the other hand, because of the lack of similar ameliorative measures at the international level, this Article suggests that an international *sui generis* regime modeled on

394. See *id.* at 655-56; see Ginsburg, *supra* note 6, at 349 (the extent of copyright protection for databases influences the initial investment decision); see also *supra* note 323.

the Database Directive be modified by incorporating a compulsory mechanism to protect the public's interest in competition in the sole-source database and information markets.

However, this Article does not agree with those who believe information should be free. Society gains little by making information free if, by so doing, it reduces the quantity and quality of information produced, or reduces the monetary value attached to socially-productive behavior like basic research.

On the other hand, if increasing the price of data results in greater remuneration to information producers, for example, those engaged in basic research and science, society may attach a higher value to such socially-productive behavior, which in turn could result in more scientists and researchers, who could in turn produce more information. Thus, greater remuneration to researchers and scientists may result in spillover effects that could have far-reaching social implications. What, for example, might children think if society paid the next dedicated researcher laying the foundation for the next Salk or Pasteur as much as the next Danielle Steele, John Grisham, or Theodore Geisel?³⁹⁵

395. Geisel is better known as Dr. Seuss; Steele and Grisham are successful contemporary novelists.